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# Wire & Cable

January 2017

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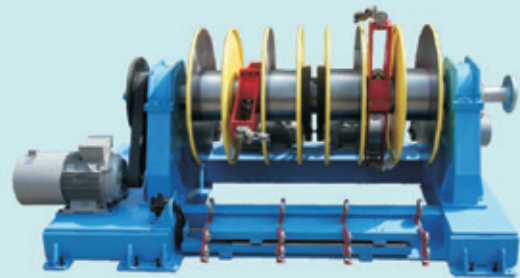
Horizontal taping machine



XBΦ500-Φ2500 Cantilever type single twisting machine



Auto coiling and stacking line



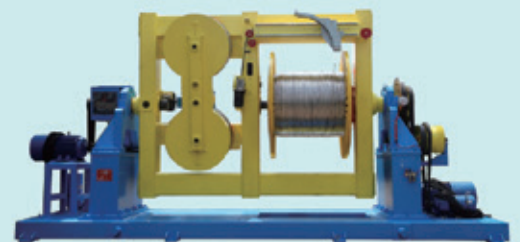
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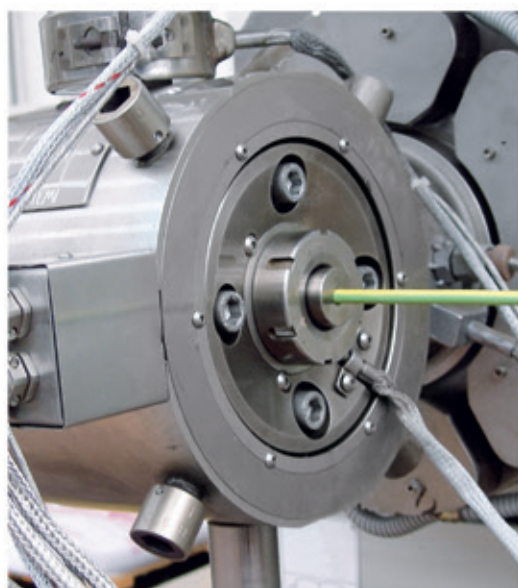
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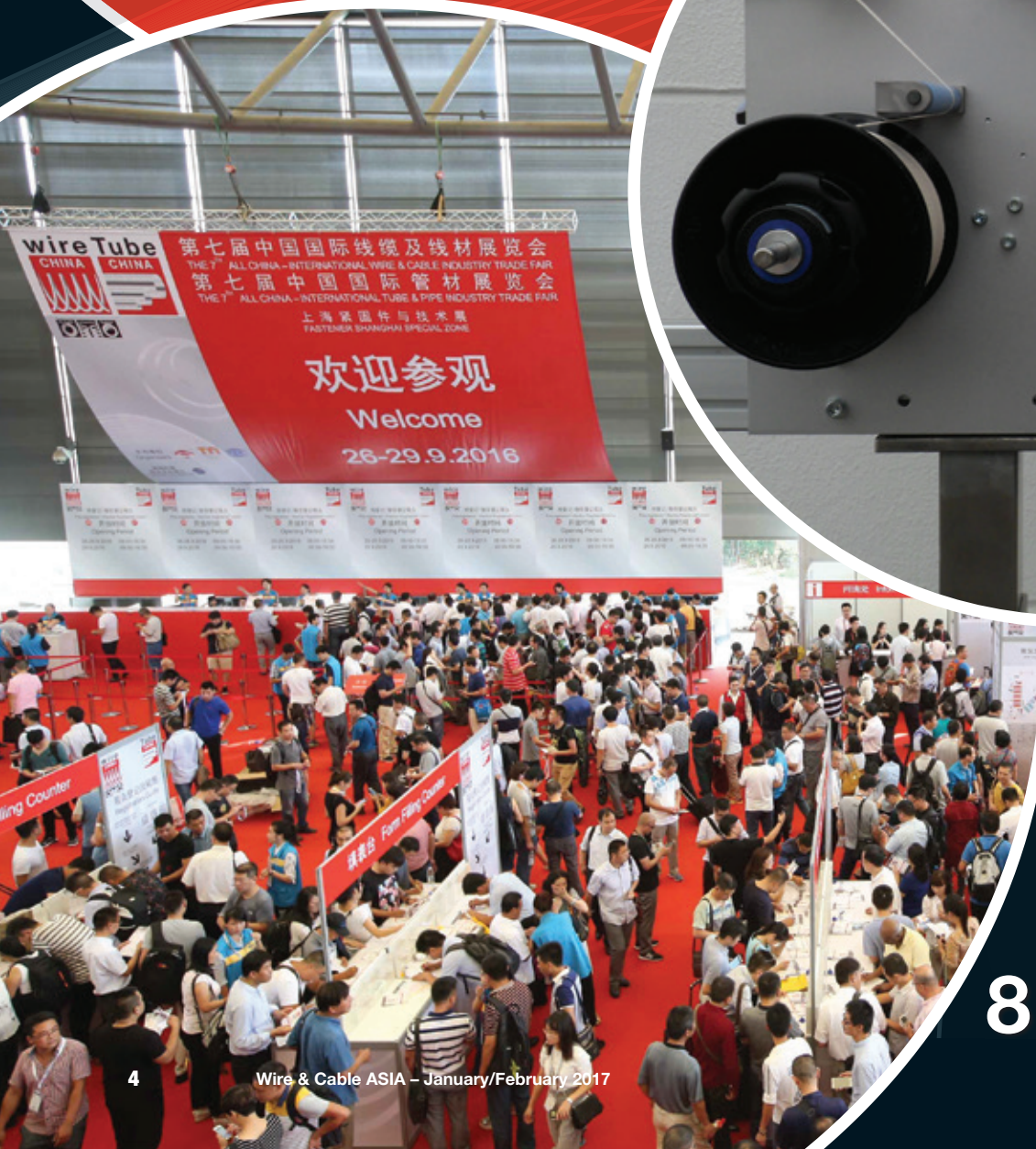
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# The importance of taking stock of China and India

Firstly, I would like to say happy new year to all our customers and readers. The first issue of the new year takes a slight glance back at events in 2016 with a round-up from both wire China and Wire & Cable India featuring in this issue.

Encouraging words and figures from organisers Messe Düsseldorf can leave the industry in no doubt that a very bright future lies ahead. In China, record breaking numbers of visitors – totalling more than 42,000 from 94 different countries – descended on the Shanghai New International Expo Center for the three-day exhibition.

Those figures showed a 10.9 per cent rise from two years ago as the show reaffirmed its position as one of Asia's leading exhibitions in the wire and cable market. Full details can be found on page 8.

Further optimism could be found in India just a few weeks later where an increase in visitor numbers by some 28 per cent can only highlight the importance of this important exhibition going forward.

Exhibitors were delighted with the response from those visitors, with many having in-depth conversations with attendees having high competence in the decision-making process. You can read the report on page 43.

And whilst we are only just beginning this new year, Messe Düsseldorf is already turning its attention to next year as wire 2018 is starting to loom a little larger on its calendar already. Read the latest details on page 14.

We also hope you enjoy catching up with all the latest from the industry on our newly launched website at [www.read-wca.com](http://www.read-wca.com)

David Bell  
Editor



## When and where

### 2017

23–25 March:  
**TEL** – trade exhibition –  
Istanbul,  
Turkey  
**Organisers:**  
Voli Fuar Hizmetleri  
**Fax:** +90 212 604 5051  
**Email:**  
[info@voli.com.tr](mailto:info@voli.com.tr)  
**Website:**  
<http://tel-fair.com>

### 2017

8–11 May:  
**Interwire** –  
trade exhibition –  
Atlanta, Georgia, USA  
**Organisers:**  
Wire Association  
International  
**Fax:** +1 203 453 8384  
**Email:** [sales@wirenet.org](mailto:sales@wirenet.org)  
**Website:**  
[www.wirenet.org](http://www.wirenet.org)

### 2017

5–8 June:  
**wire Russia** –  
trade exhibition – Moscow,  
Russia  
**Organisers:** Messe  
Düsseldorf and VNIIEP  
**Fax:** +7 499 246 9277  
**Email:**  
[info@wire-russia.com](mailto:info@wire-russia.com)  
**Website:**  
[www.wire-russia.com](http://www.wire-russia.com)

### 2017

19–21 September:  
**wire Southeast Asia** –  
trade exhibition –  
Bangkok, Thailand  
**Organisers:**  
Messe Düsseldorf  
Asia Pte Ltd  
**Fax:** +65 6337 4633  
**Email:** [wire@mda.com.sg](mailto:wire@mda.com.sg)  
**Website:** [www.wire-southeastasia.com](http://www.wire-southeastasia.com)



○ Visitors get a warm welcome at wire and Tube China 2016

# wire China leads the way!

AS one of Asia's most influential international trade platforms for wire and cable, wire China successfully ended at the Shanghai New International Expo Center, facing transformations and changes together with the industry as a whole and showcasing the cutting-edge products, technologies and solutions from a new perspective.

Bolstered by the trade fair's strong appeal and support from various organisations, wire China 2016 hosted a record-breaking 42,199 trade visitors from 94 countries and regions, an increase of 10.9 per cent over the previous edition. In addition to the large number of local professionals, a growing presence of overseas buyers attended the fair.

The top ten source countries and regions of overseas visitors included South Korea, India, China, Taiwan, Japan, Russia, Malaysia, Iran, Thailand and the USA.

By virtue of the newly upgraded Fasteners Shanghai Special Zone and two novel outdoor pavilions, the total exhibition area reached an unprecedented 97,000m<sup>2</sup> to

accommodate 1,645 exhibitors from 31 countries and regions.

In addition, many international pavilions from Germany, Italy, North America, Australia, France, South Korea, Japan and Taiwan provided increasing international participation enabling visitors to discover cutting-edge products from around the world without going abroad.

The achievements from transformations by Chinese enterprises also made their stunning debut, as domestic-produced equipment and technologies with independent intellectual property rights and brand influence became another highlight for overseas buyers.

wire China made great progress in every aspect, reaffirming its leading position in Asia's wire industry. Both exhibitors and visitors were greatly satisfied to achieve their business goals at the show.

Dr-Ing Christoph Müller-Mederer, CFO from Wafios AG, said: "The biennial wire and Tube China brings together high-quality buyers from China and many surrounding countries, some of

whom have already signed on-site letters of intent to purchase. This show has clearly become an important channel for Wafios to expand into the Asian market. I believe that with the advancement of Industry 4.0, the industry as a whole will become better and better."

Themed "Innovation, Optimisation and Vitality", the 2016 China Wire & Cable Industry Conference focused on exploring the innovative, optimised road of development for China's manufacturing industry under the new normal economy.

During the forum, the guests interpreted the 13<sup>th</sup> Five Year industrial development strategy and guiding opinions, providing insights for the wire industry to understand the future direction for the industry's adjustment, improvement and development.

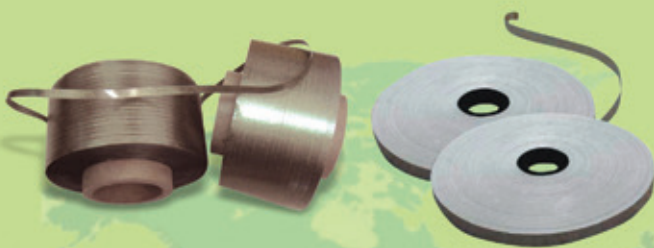
The next staging of wire and Tube China will be held from 26<sup>th</sup> to 29<sup>th</sup> September 2018 at the Shanghai New International Expo Center.

**Messe Düsseldorf (Shanghai) Co Ltd – China**  
**Website:** [www.wirechina.net](http://www.wirechina.net)

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- TV8000 Domestic winding machine
- 30000-40000 Double turn winding machine
- 5000-60000 A type single helix winding machine
- 500-6000-40000 Single helix winding machine

## LEADING MAGAZINES

for the wire and cable industries



## ABB to divest cable business to NKT Cables

NKT Cables is acquiring ABB's global high-voltage cable system business with a total enterprise value of €836m (US\$934 million). High-voltage cables are key components in sustainable energy networks, used for transmitting large amounts of electricity over long distances. The business is part of ABB's Power Grids division, which is currently undergoing a strategic review.

NKT Cables designs, manufactures and supplies power cables for low-, medium- and high-voltage solutions mainly in the alternating current (AC) area. It has production facilities in Europe and China as well as sales offices around the world, and employs around 3,200 people. In 2015, revenue was €1.2bn.

"We are combining two strong cable portfolios rooted in a shared Nordic heritage that will be more competitive on a larger scale under NKT Cables' ownership, while maintaining access to supply through a long-term strategic partnership," said ABB CEO Ulrich Spiesshofer.

ABB's high-voltage cable technology and manufacturing as well as service footprint is highly complementary with NKT Cables' activities, making the combined business suited to serve the rising global demand for long-distance power transmission cable systems. The combined operational scale and reach of the two businesses is expected to lead to even better service for global customers.

"ABB's high-voltage cable business will add considerable strength to our portfolio and bring us a world-class manufacturing operation. We will leverage the technology, domain competence and highly skilled workforce to grow this business," said Michael Hedegaard Lyng, president and CEO of NKT Cables.

ABB's cable system business offers turnkey solutions including design, engineering, supply, installation, commissioning and service. It had adjusted stand-alone revenues of US\$524 million in 2015, employs around 900 people, and has state-of-the-art manufacturing and R&D capabilities for high-voltage submarine and underground cables in Karlskrona, Sweden.

The transfer of assets also includes a new, cutting-edge cable-laying vessel,

currently under construction. With experience of over a century, the business serves a range of applications and has commissioned hundreds of alternating current and direct current links around the world.

"As part of the strategic partnership, ABB and NKT Cables will work together

on future projects to access market opportunities in areas like sub-sea interconnections and direct current (DC) transmission links," said Claudio Facchin, president of ABB's Power Grids division.

**ABB – Switzerland**  
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## Tianjin technology centre opens its doors

SCHULER has launched the first technology centre for forming technology systems in China with an innovation day.

The demonstration and reference centre in the Northern China industrial metropolis of Tianjin offers automotive manufacturers, suppliers and other

companies from the sheet metal-processing sector the opportunity to try out a servo press from the latest generation for themselves.

The Servo TechCenter Tianjin is Schuler's first demonstration centre across all of Asia and forms a key part



○ *The opening of the site in Tianjin, China* of the company's strategy, to be ranked among the leading providers in China, as the largest press market in the world, in all the key price-performance sectors.

Schuler's customers can perform their own stamping and die tests on the TwinServo press, for example. "We support our customers in optimising their productivity and therefore becoming even more successful," said chief operating officer Dr Peter Jost, at the innovation day.

"Our first TechCenter in China has not only put our technological leading position to the test, but also underlines the significance of the Chinese market for Schuler's future growth."

Schuler has been operating in China with a number of sites since the early 1990s and just a few months ago acquired the Chinese press manufacturer Yadon, in the middle price-performance segment.

"This country has enormous potential for us," added China chief executive officer Oemer Akyazici. "With the products from Yadon under our belt, we are now optimally positioned to cover further market segments."

Around 140 visitors were lucky enough to see the new press in action at the Servo TechCenter and listen to presentations – for example on TwinServo technology, with which the 1,600-ton system is equipped – as well as view the comprehensive range of services from Schuler in Tianjin.

In addition to Tianjin, Schuler offers customer-specific consulting services at the German sites in Göppingen, Erfurt, Gemmingen and Heßdorf as well as at the US TechCenter.

**Schuler AG – Germany**  
**Website:** [www.schulergroup.com](http://www.schulergroup.com)

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- The aluminum tube after extruding is seamless, smooth in circle shape, uniform material and without any cracks, compared to metal taping and forming lines.
- Compared to a hydraulic extruding line, the line doesn't require any pre-heating resulting in low energy consumption. When the machine is restarted, the extruding die needs to be heated for 7 hours.
- Low investment, affordable spare parts and low operating costs.
- Double extruding wheels with double groove, short flow pass and low inner pressure. The tube wall thickness is uniform.
- The line is also able to make aluminum profile.
- The compact design is easier to operate.

The new technology is ground breaking and world leading, and has received an award from the China Machinery Industry Federation.

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## ‘Join the best – worldwide’ with the wire and Tube flagship trade fairs in Düsseldorf

TRADE fairs for metal production, processing and finishing, for wires, cables and tubes, iron and steel have a long tradition in Düsseldorf, Germany.

‘Join the best – worldwide’ – this is the slogan summing up the international portfolio of wire, cable and tube trade fairs.

For more than 30 years, the wire and Tube trade fairs have taken place jointly in Düsseldorf. As the number one trade fairs for their industries, they have gained a reputation as international top players in their industries and have significance far beyond the state capital city of Düsseldorf.

They have contributed to Düsseldorf, the business hub of North Rhine-Westphalia, acquiring an excellent reputation around the globe as a platform for industrial innovation.

Meanwhile, there are ten international satellite trade fairs for the wire and tube industries. As of now, they will present themselves with a unified logo to show that they belong to a single umbrella brand.

A single corporate design ensures the uniform appearance of the individual trade fairs while simultaneously demonstrating that they are members of a single product family.

The appearance of each fair has been designed so that their logos have a uniform appearance in terms of form, colour and lettering.

“In terms of content and visual appearance, the ‘Join the best – worldwide’ portfolio with its lead wire and Tube trade fair in Düsseldorf and its ten international satellites will present themselves as coming from a single home,” said Friedrich-Georg Kehrer, global portfolio director metals and flow technologies at Messe Düsseldorf GmbH.

In addition to the wire and Tube trade

fairs in Düsseldorf, the international portfolio of metal trade fairs, which united under the ‘Join the best – worldwide’ slogan, includes satellite trade fairs such as wire China and Tube China in Shanghai, wire and Tube India in Mumbai, wire and Tube Russia in Moscow, Russia, wire and Tube Southeast Asia in Bangkok, Thailand, and the wire South America and Tubotech trade fair in in São Paulo, Brazil. The portfolio spans the globe and offers further potential for growth.

Be it in Germany, Brazil, China, India, Russia, Thailand or the USA – together with its foreign subsidiaries and in cooperation with international industry and business associations as well as local organisers, Messe Düsseldorf is the host of outstanding regional satellite events. They have gained a reputation as information and ordering platforms for their respective catchment areas.

Information on the trade fairs and their worldwide satellites are available on the web portals at [www.wire.de](http://www.wire.de) and [www.tube.de](http://www.tube.de)

**Messe Düsseldorf GmbH – Germany**

**Website:** [www.messe-duesseldorf.com](http://www.messe-duesseldorf.com)

## New Niehoff agencies for Indonesia, Thailand and Vietnam

Since July, Maschinenfabrik Niehoff has been collaborating with three new agencies for Indonesia, Thailand and Vietnam: PT Reinplas Sejahtera (Indonesia), the KBF Group Co Ltd (Thailand) and Song Song Co Ltd (Vietnam).

All three agencies are familiar with the issues of industrial companies, especially wire and cable manufacturers.

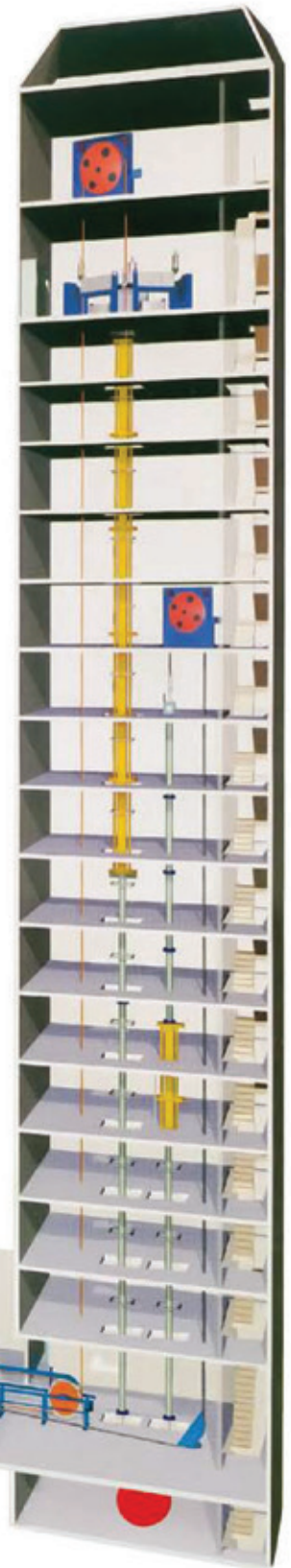
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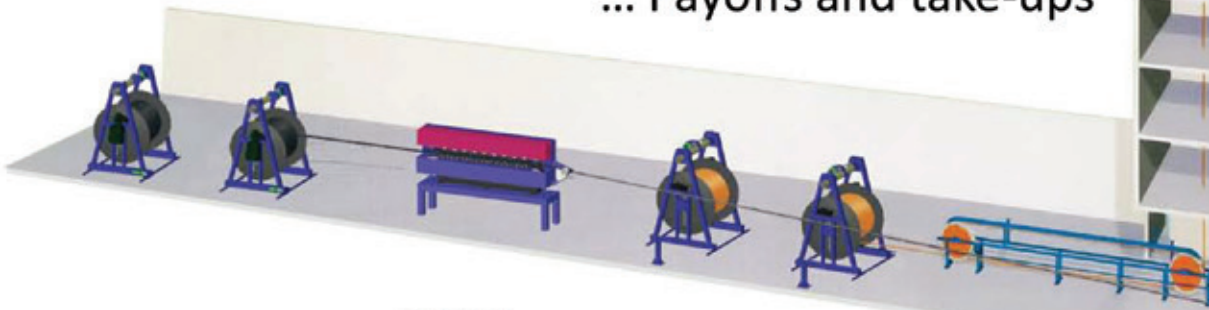


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## IWCS and UL team up for China symposium

THE UL and IWCS China 2017 Cable & Connectivity Symposium is the premier Asian venue to learn of new technologies in cable and connectivity materials, products, processes and applications.

IWCS Inc, producer of the International Cable & Connectivity Symposium, and UL, a global independent safety science company, have collaborated to establish a regional Asian conference in Shanghai, China.

The UL and IWCS China 2017 Cable & Connectivity Symposium is the region's leading forum for the exchange of information on technical innovations and solutions in the industry.

Based on the IWCS educational symposium format, the China symposium will be held from 25<sup>th</sup> to 27<sup>th</sup> April 2017 at the Marriott Shanghai City Centre.

"We were pleased to be asked by UL, a prominent and respected global organisation, to offer this additional regional conference in China," said Robert Wessels Jr, chairman of IWCS.

"This is our 65<sup>th</sup> year of the global symposium conducted in the United States and we are now looking forward to presenting topics to a broader audience in Asia, particularly to those who cannot travel here."

The IWCS Symposium has been the leading worldwide conference for peer reviewed papers and presentations on technologies and trends in cable and connectivity for the communications, data, electronics, power, industrial, automotive and aerospace industries.

L F Lai, vice president and general manager of UL's Wire and Cable division agrees, adding: "The IWCS Connectivity Symposium is an internationally reputable conference for the wire and cable industry with a well-established history."

Reliable and higher speed connectivity is an increasing need, which is being fulfilled by the fast development of emerging technologies from global industry players.

"As China is the largest market for wire and cable connectivity with the strongest need for acquiring the knowledge of latest innovations, it is

logical to establish this regional event in China as the premier venue to learn of new technologies in cable and connectivity materials, products, processes and applications," he added.

"IWCS is the most renowned and influential global symposium organiser in the field of connectivity technologies, and we believe that IWCS is the most effective at presenting technical papers."

In the technical conference, speakers present peer reviewed papers on timely, informative topics selected from hundreds of submitted abstracts from top firms around the globe. A keynote speaker addresses the attendees at a plenary luncheon.

The executive track features prominent speakers and topics of interest to general and commercial management. The professional development

programme includes core courses in fibre, copper, materials, and new courses on the issues and technologies of high concern such as codes and standards. A supplier exhibition displays the latest products and services from the important suppliers in the cable and connectivity industry.

The IWCS Symposium Committee generates a high calibre programme for each year's conference, with over 100 papers and presentations in 20 compelling sessions over three full days.

The UL and IWCS China 2017 Cable & Connectivity Symposium is an opportunity to explore discussions on regional topical issues, learn about new technologies and network with global industry colleagues.

**IWCS – USA**  
**Website:** [www.iwcs.org](http://www.iwcs.org)

## Malaysia conference for lubricant manufacturer



○ *The Metalube team at the conference in Malaysia*

UK lubricants manufacturer Metalube hosted a conference at the Saujana Hotel in Kuala Lumpur, Malaysia, for its Asia team. Delegates travelled from Turkey, UAE, India, Malaysia, Thailand, Indonesia and China, covering almost the entire region.

Douglas Hunt, commercial director, said: "This type of event is valuable in so many ways. It gives us a platform to train our Metalube teams, share new product developments and to highlight sales techniques. However, most importantly it allows our employees, who are scattered across the region, to meet up, form relationships and convey their personal experiences."

Metalube manufactures a range of non-ferrous drawing oils and maintenance lubricants as well as a variety of corrosion protection and forming oils. The experienced exporter has offices in China, India, Brazil and UAE.

**Metalube Ltd – UK**  
**Website:** [www.metalube.co.uk](http://www.metalube.co.uk)

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## Capacity expansion for Huber

THE Fire Retardant Additives (FRA) business unit, part of the Huber Engineered Materials division of J M Huber Corporation (Huber), has announced a 10 per cent capacity expansion of its Martinal® fine precipitated alumina trihydrate production at its newly acquired

Martinswerk Plant in Bergheim, Germany.

The additional capacity is projected for completion by the third quarter of 2017. This addition follows a 20 per cent capacity expansion in precipitated alumina trihydrate just completed at

Huber's Bauxite, Arkansas, facility in the United States.

The investment by Huber in additional capacity in Bergheim commences only seven months after the February acquisition of Martinswerk GmbH, including the joint venture interest in Magnifin Magnesiaprodukte GmbH & Co KG.

"This investment is the first in a series of expansions planned for Bergheim as we begin implementing our longer term strategy for the business," says Jerry Bertram, vice president and general manager of Huber's FRA business unit.

"The capacity expansion is part of our ongoing global growth plan and underlines Huber's commitment to the non-halogenated fine precipitated fire retardant market and enables us to meet increasing demand from our valued customers," adds Martin Schulting, managing director of Huber's FRA European operations.

Huber is a global leader in the production of fine precipitated alumina trihydrate and magnesium hydroxide, both non-halogenated fire retardants. Its FRA business unit has four manufacturing sites in North America and two in Europe.

Huber has been a trusted supplier of non-halogenated flame retardants and smoke suppressants for more than 30 years.

**J M Huber Corp – USA**  
Website: [www.huber.com](http://www.huber.com)

### New managing director

Windsor Kunststofftechnologies GmbH, based in Hanau, Germany, has appointed Peter Kochs as its new managing director. Windsor is the Europe-wide representative for hydraulic and servo-hydraulic injection moulding machines for the Taiwanese manufacturer FCS (Fu Chun Shin Group). In addition, it is the representative in Germany of JSW Ltd (The Japan Steel Works, Tokyo), manufacturer of all-electric injection moulding machines.

**Windsor Kunststofftechnologies GmbH – Germany**  
Website: [www.windsor-gmbh.de](http://www.windsor-gmbh.de)

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## Ribbon is cut on Delfingen's new Moroccan plant

DELFINGEN, global automotive supplier and manufacturer of on-board network protection solutions and fluid transfer tubing, has inaugurated a new site in Tangier, Morocco, an area considered by many as the new Detroit of North Africa.

The company has been active in Morocco since 2000 with a production plant in Casablanca followed by a logistics centre in Tangier in 2003.

The company now enters a new stage of strategic importance with the launching of a production facility of over 8,500m<sup>2</sup> in the Tangier Free Zone (TFZ). This significantly strengthens Delfingen's industrial footprint in the area.

This new site, with already over 100 co-workers, meets the company's standards of industrial excellence, and will specialise in the manufacturing of technical tubing and sleeves for automotive wiring harness protection, and in the assembly services for sealing systems in partnership with the Hutchinson company.

This new step reflects the group's commitment to continuously assist its customers by being near their sites to enable higher reactivity and, thus, better service.

Gérald Streit, CEO, said: "The impressive economic take-off of the automotive industry in Morocco, the trust we have in the governance of the country, together with our experience in local production for over 15 years prompt us to make significant investments in this area of the world over the next three years."

The opening ceremony took place in presence of Bernard Streit, president of the Delfingen Group, Gérald Streit, and the executive committee. Representatives of the TFZ, local

### New role at T&T

Joe Maglich has recently joined T&T Marketing Inc as account manager, mid-Atlantic, USA.

**T&T Marketing Inc – USA**  
Website: [www.ttmarketinginc.com](http://www.ttmarketinginc.com)

authorities, as well as many customers and partners joined them to celebrate the event.

**Delfingen Industry SA – France**  
Website: [www.delfingen.com](http://www.delfingen.com)



○ The ribbon cutting at the new plant

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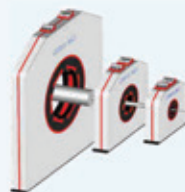
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## High carbon wire production lines

IN today's world, the word progress has become synonymous with expectations of better quality. In the sector of high carbon steel wire, the evolution of the chemical composition of these wires, with always higher carbon contents, has meant a continuous innovation of both the wire production equipment and the entire production process.

This increase in the mechanical properties of the wire has amplified the difficulties of high-speed drawing due to the development of high temperatures.

Much has been done to optimise the drawing process, with new die angles and significant developments in lubricant quality, but existing capstan cooling systems in the wire drawing machines have meant that it has not been possible to exceed certain limits.

The R&D department of Eurolls, recognised in the design and production of rolls and cold rolling cassettes, has developed a solution that permits exceeding existing limits by the introduction of a new cold rolling cassette specifically designed for high carbon wire production.



○ Continuous innovation from the R&D team at Eurolls

The cold rolling process, due to a lower friction coefficient and an innovative wire lubrication system, generates less heat thereby lowering wire temperature during the reduction process.

All recent Eurolls wire drawing lines have been supplied with the possibility to adopt this new cold rolling system. Furthermore, these same new lines have not only an improved capstan cooling system but also benefit from

the development of a new internal coating specifically studied by Eurolls R&D.

This internal coating ensures a reduced formation of deposits and rust while guaranteeing an increase in heat transmission (same cooling capacity but with a lower quantity of cooling water).

**Eurolls SpA – Italy**  
**Website:** [www.eurolls.com](http://www.eurolls.com)

## More Davis-Standard machines on the way

Indonesian film producer PT Kencar Sukses Investama is expanding its presence in the Southeast Asian film market by adding two more Davis-Standard cast film machines to its facility in Sidoarjo, Indonesia.

This brings its total to four Davis-Standard machines in just over five years. It has introduced several innovative food-packaging films to the region, accounting for a rapid growth rate and strong customer base.

Kencar was the first company in Southeast Asia to introduce five-layer CPP films, and with the additional Davis-Standard machines will become the first with six-layer capabilities. This will enable it to support markets for high barrier CPP as well as CPE films that offer better thickness uniformity and clarity than comparable blown films.

Kencar president Eddy Soelayman

said: "The Southeast Asia flexible packaging market is growing at more than eight per cent per year and Kencar has outpaced that growth by more than 50 per cent. We see a transition in the CPP market from commodity to high-performance films that have superior barrier, metal adhesion, gloss and heat seal properties.

"We are currently producing five-layer CPP films with heat seal properties like CPE with excellent gloss and metal adhesion. With the new machines we can take that a step further by producing CPP films with unique barrier properties that allow converters to down gauge and reduce conversion steps to save cost."

The Davis-Standard cast film machines will be higher speed versions of the original two. Both machines will feature next generation DSB® barrier screws to handle Kencar's diverse range of

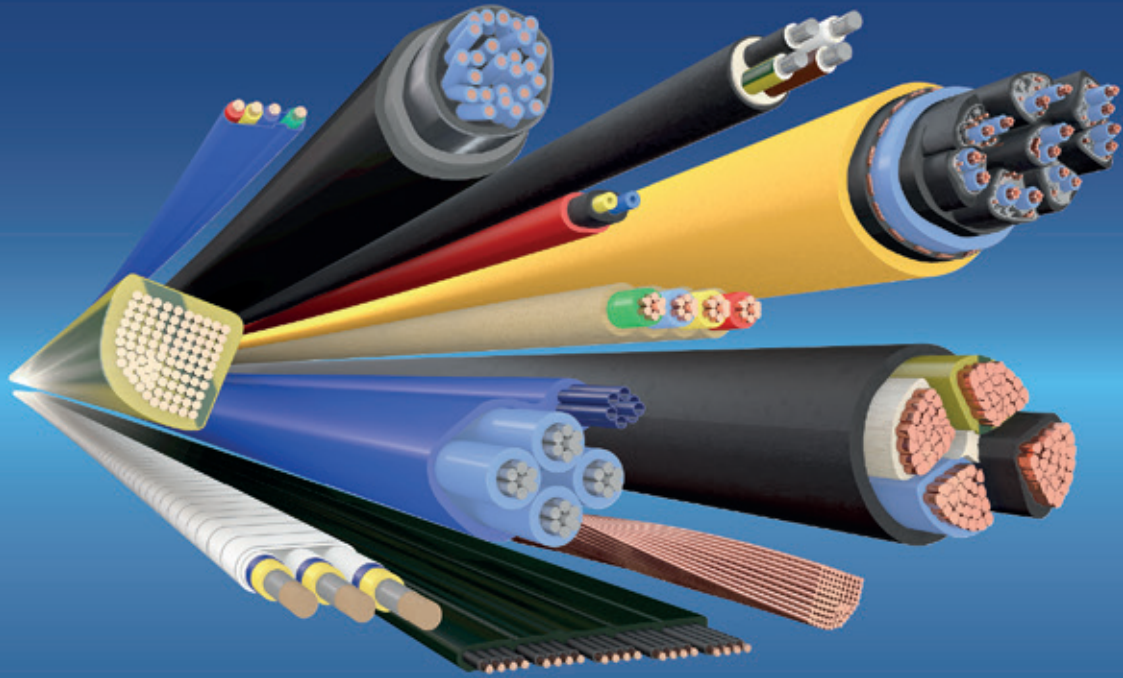
materials and film applications. Feedblock and die technology will accommodate up to seven distinct layers in a structure.

The "ironing" roll will be included on the winder for consistent roll conformity. Kencar appreciates Davis-Standard's proven technology, which produces films with higher surface treatment retention, better metal adhesion and improved oxygen and water vapour barrier properties, all critical in flexible packaging.

"Davis-Standard has been excellent in providing creative solutions for the unique films we continue to introduce to the market," added Mr Soelayman. "They have a good understanding of polymer processing and know-how to transform our vision into final products."

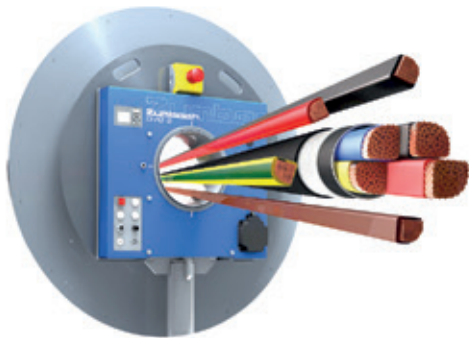
**Davis-Standard LLC – USA**  
**Website:** [www.davis-standard.com](http://www.davis-standard.com)

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## £250,000 investment in latest welding technology

WILLIAM Hughes, specialist manufacturer of springs and bent wire components for the global automotive and aerospace industries, has invested more than £250,000 in a high technology twin robot welding cell.

The new welding cell was supplied by Bauomat with Fanuc robots, all installed at William Hughes' new UK headquarters in Stalbridge, Dorset. The unit features advanced weld monitoring and recording ensuring that the highest standards of quality and consistency are maintained for its customers.

"We have been very successful in winning significant new business from our automotive customers and this has meant that we needed to increase our production capacity for our welded seat frame assemblies," said Emma Burgon, engineering director.

The welding cell is in operation 24 hours a day during the working week and is currently being used for the bulk manufacture of seat frame backs for an SUV. This particular assembly has 56 welds and uses 25 wires.

As well as the improved quality and consistency of the finished product provided by the twin robot cell, the welding process is much quicker, enabling parts to be produced in just 1 minute 40 seconds compared with 3 minutes 45 seconds previously. Furthermore, to ensure throughput speed



○ The twin robot welding cell

is maximised, the weld jigs are all designed by William Hughes engineers using the latest CAD software and manufactured using CNC milling machines.

This recent investment in the latest manufacturing technology continues the programme of continued growth which includes the opening in October 2014 of a new 87,000ft<sup>2</sup> factory at its UK base in Stalbridge.

**William Hughes Ltd – UK**  
Website: [www.wmhughes.co.uk](http://www.wmhughes.co.uk)

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Oval 橢圓形  
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Others 其他異形鑽石模具

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Oval 橢圓形  
Rectangle 長方形  
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○ 今年中国国际线缆及线材展中的访客

## 2016中国国际线缆及线材展 获得超预期成功

2016中国国际线缆及线材展在上海新国际博览中心成功落幕。作为亚洲线缆、电缆、线材和管线行业中最具影响力的贸易平台之一，该展览携手整个行业共同面对转型和变革，以全新的视角向行业展示最先进的产品、技术和解决方案。

凭借其行业高口碑和各组织的大力支持，2016年的展会吸引了来自94个国家和地区的42,199名行业内访客，比去年增加了10.9%，创下一个新的历史记录。除了大量本土专业人士，海外买家的参与人数也在不断增加。

海外访客中前十大国家和地区分别为：韩国、印度、中国台湾、日本、俄罗斯、马来西亚、伊朗、泰国、美国、印尼和越南。

此外，本届展会还对紧固件上海特别展区进行全面升级，另外增加了两个全新户外展厅，总展示面积达到创纪录的97,000平方米，所容纳的参展人员达到1645人，来自世界上31个国家和地区。

此外，展会中还包括不同国家的国际展厅，包括德国、意大利、北美、澳大利亚、法国、韩国、日本和台湾。这一举措提高了国际参与度，让访客们无需走出国门即可了解世界各地的尖端技术产品。

这次展会还让访客们首次了解到了中国企业转型所实现的成就。很多具有自主知识产权和品牌影响力的中国制造设备和技术，成为海外买家关注的另一个焦点。

无论从哪个方面而言，今年的国际线缆及线材展都实现了巨大的进步，再次证明了其在亚洲线缆和线材领域中的领军地位。无论是参展商还是访客，都对本次展会中所取得的业务目标感到非常满意。

Ing.Christoph Müller-Mederer 博士，Wafios AG首席财务官表示：“在两年一届的中国国际线缆及线材展中，汇聚了来自中国和很多周边国家的优质买家，其中很多买家更是在展会现场

签下购买意向书。很显然，此次展会已成为Wafios向亚洲市场拓展业务的重要渠道。我相信，随着工业4.0的不断发展，这个行业整体的前景将越来越好。”

展会期间还举行了2016中国线缆和线材行业大会，以“创新、优化、活力”为主题，致力于在新的经济形态下，为中国制造业探索出一条更富活力的发展道路。

在这次论坛中，与会者对十三五期间的行业发展战略和指导意义进行了解读，为线缆行业的发展提供深入见解，对行业调整、改善和发展的未来方向予以精辟解读。

下一届中国国际线缆及线材展将于2018年9月26日至29日在上海新国际博览中心举行。

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## 华为携手Leica Camera成立新的研发中心

Max Berek Innovation Lab是华为和Leica Camera AG公司共同成立的创新研发中心，这个实验室也是两家公司拓展战略合作的重要标志。

七个月前，两家公司已公开宣布在光学工程方面建立长期技术合作关系。随后两个月，华为就在全球推出屡获殊荣的华为P9和P9Plus智能手机，并大获成功。

新实验室坐落在Leica公司在德国韦茨拉尔的全球总部，将致力于推动光学系统和基于软件技术领域的发展，从而在摄影和移动设备的广泛领域中提高图像质量。

其它研发领域还包括：开发计算成像、增强现实(AR)和虚拟现实(VR)解决方案。除了来自两家公司的研发资源，华为和Leica还计划与德国以及国际各大院校和研究机构进行密切合作。

这家实验室的成立离不开两位商业领军人物的支持：Leica Camera AG的大股东及咨询委员会董事长Andreas Kaufmann博士和华为创始人任正非先生。

Andreas Kaufmann 博士强调：“华为和Leica Camera AG之间已建立了成功的战略关系，成立Max Berek Innovation Lab让这一合作关系更进一步，为双方进一步合作研发成像领域突破性技术，奠定了扎实的基础。”华为创始人任正非说：“未来90%的数据通信都将是图像和视频的形式。Max Berek Innovation Lab让华为能够与Leica建立更密切的合作关系，不断改善图像和视频质量。因此，我们将最先进创新引入智能手机的照相机市场，向消费者提供更大的价值。”

Leica Camera AG首席运营官、Max Berek Innovation Lab主任Markus

Limberger补充到：“华为和Leica有很多共同点，不仅在于强大的创新实力和研发经验，更致力于提供最高质量标准。Max Berek Innovation Lab对我们而言是一个具有历史性意义的机遇，通过这种方式将两家公司的资源和广泛知识结合在一起，共同探索改变游戏规则的先技术。”

研发中心的命名旨在纪念德国显微镜技术科学家、Leica镜片创始人Max Berek (1886-1949)，他还曾负责为伟大的35毫米照相机(Oskar Barnack发明并制作)进行20多种镜片的光学设计工作。

这些镜片具有卓越的成像性能和完美的校靶性能，与Barnack独创的结构相结合，让Leica的35毫米相机获得世界范围的认同。

Huawei Technologies Co Ltd – 中国  
网址: www.huawei.com

## IWCS进军中国

2017 UL 与 IWCS 中国论坛 - “线缆及连接论坛”是亚洲首屈一指的行业大会，为线缆与连接材料、产品、工艺和应用的新技术提供开放的交流平台，引领行业最新技术发展潮流。

这次亚洲区域性盛会将在上海举办，是两家公司合作的结晶：国际线缆和连接论坛的主办方IWCS公司、全球独立安全科学公司UL。

这次地区性重要论坛将为与会者提供重要机遇，深入交流行业的技术创新和解决方案。此次中国论坛的举办地点为上海雅居乐万豪酒店，时间为2017年4月25日至27日，将采用IWCS教育研讨会的形式进行。

IWCS 的主席Robert Wessels, Jr表示：“UL是一家知名的全球性集团，我们非常高兴受到其邀请，共同在中国举办区域会议。”

我们已经在美国举办了65年全球行业讨论会，现在我们期待着为亚洲更广泛的受众展示最新课题。”

IWCS研讨会一直是国际领先的行业会议，为电线电缆和连接产品、数据、电力、工业、汽车、航空航天等应用通讯评估及发表论文成果，展示最新的技术发展趋势。UL副总裁兼电线电缆事业部总经理赖伦辉指出：“IWCS连接研

会是信誉卓著的国际行业盛会，为电线电缆行业提供交流平台。”

全球的行业从业者不断开发创新技术，从而满足对可靠与高速连接的日益增长的需求。

他说：“中国是电线和电缆连接的最大市场，对获取最新创新知识具有强烈需求，因此我们将亚洲峰会的地点定在中国，为电缆和连接材料、产品、工艺和应用方面提供专业技术及资讯沟通平台。

IWCS是连接技术领域最著名与最具影响力的全球技术论坛组织者，我们认为IWCS在发表技术论文方面最为高效。”

在此次技术发布会上发表的主题论文，是从数百份世界各地行业顶尖公司提交的文件中精选而出。这些文件都与时俱进、内容丰富。主讲人在会议午餐宴上进行了简短发言。

出色的演讲者和引人入胜的话题到商业管理主题，都是本次论坛的特色。专业发展计划包括光纤、铜、材料以及高度关注的法规和标准的发布和新技术课题等核心计划。

供应商将展出来自电缆和连接产业主要供应商的最新产品及服务。

每年，IWCS研讨会委员会都会为行业带来高水准议题，在整整3天的会议时间内，将呈现超过100篇论文和在20多场论坛，令人受益匪浅。2017 UL与IWCS中国论坛 - 专业线缆及连接论坛”旨在与全球业界同仁共同探讨区域热点话题，探讨新技术和网络应用。

IWCS - 美国  
网址: www.iwcs.org

## Niehoff在印尼、泰国和越南的新代理

Maschinenfabrik Niehoff自七月以来，一直都在于印尼、泰国和越南的三家新代理进行合作。分别为：PT Reinplas Sejahtera (印尼)、KBF Group Co Ltd (泰国)和Song Song Co Ltd, (越南)。这三家代理公司都非常了解行业企业的各项事务，特别是线材和线缆制造领域。

Maschinenfabrik Niehoff GmbH & Co KG - 德国  
网址: www.niehoff.de



# YDGE

## PTFE Coaxial taping machine

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WGSB 系列重型卧式编织机
- LRBJ series vertical taping machine  
LRBJ 系列立式绕包机
- WRBJ series horizontal taping machine line  
WRBJ 系列卧式绕包机生产线
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Contact person : Stephen Chen

## 天津技术中心正式启动

Schuler在中国推出首个专注于成型技术系统的技术中心，并将启动当天命名为“创新日”。

该示范和基准中心名为 **Servo TechCenter Tianjin**，坐落在中国北部的工业城市天津。对于汽车制造商、供应商和其它金属板加工行业企业而言，他们可以利用这个机会体验最新一代的伺服压机。

这是Schuler在整个亚洲地区推出的首个示范中心，也是公司战略中的重要组成部分。中国是世界上最大的冲压设备市场，该中心的启动也让Schuler真正迈入中国行业领先供应商之列。

Schuler的客户亲自在中心的设备上上进行冲压和模压实验，比如TwinServo冲压机。公司的首席运营官Peter Jost教授在创新日中表示：“我们支持客户进行生产力优化，并以此获取更大的成功。”



○ 中国天津技术中心启动

我们在中国成立的第一个技术中心不仅让我们在测试领域中获得技术领先地位，同时也证明了中国市场对于Schuler未来发展的至关重要。”

自上世纪90年代初以来，Schuler已在中国成立了多个工厂。就在几个月前，公司收购了中等性价比产品市场中的知名企业扬州锻压机床股份有限公司。

中国首席执行官Oemer Akyazici补充道：“中国向我们提供了重大机遇。将扬州锻压公司纳入麾下进一步夯实我们的实力，让我们可以向更多分类市场中进军。”

在本次创新日中，约有140名参观者在Servo TechCenter中观看到最新冲压设备的运转情况，并听取不同主题的演讲，比如关于TwinServo技术的介绍，这项技术的设备系统达到1600吨。此外，参观者们还可了解Schuler天津推出的综合服务。

除了天津，公司还在世界各地推出专为客户打造的咨询服务，包括在德国Göppingen、Erfurt、Gemmingen和Heßdorf的工厂以及美国的技术中心。

**Schuler AG – 德国**  
网址: [www.schulergroup.com](http://www.schulergroup.com)

## ABB将线缆业务出售给NKT Cables

NKT Cables目前正在收购ABB的全球高压线缆系统业务，该业务的总价值为8.36亿欧元（9.34亿美元）。高压线缆是可持续性能源网络中的重要组成部分，用于长距离、大容量电力的传输工作。这一领域也是ABB旗下Power Grids公司的业务之一。目前，该公司正在进行一次战略评估。NKT Cables为高中低压电缆解决方案设计、制造和供应电缆，主要面向交流电应用领域。公司的主要生产厂位于欧洲和中国，销售网络遍布世界各地，雇员超过3,200人。2015年公司收入为12亿欧元。

ABB首席执行官Ulrich Spiesshofer表示：“目前，我们正在将两个强大的电缆产品系列结合到一起，这两个产品系列都有着北欧‘血统’，在NKT Cables的旗下，它们将在更广义的角度上具备更高的竞争力，同时通过长期战略合作关系保持其供应能力。将我们在电缆设备领域中的市场地位与NKT Cables的实力相结合，充分证明了我们采取积极产品组合管理的决心，这也是我们新起步（Next Level）战略中的重要部分。”

ABB的高压电缆技术、制造以及服务范围，是对NKT Cables业务重要补充。随着全球对远程输电系统的需求不断增加，两者结合后一定会更好地满足这一需求。两项业务合并后的运营规模和业务范围，将会为全球客户提供更优质的服务。NKT Cables的总裁兼首席执行官Michael Hedegaard Lyng说：“ABB高压线缆业务将大幅提高我们产品组合

的实力，帮助我们迈入世界一流制造商之列。我们将充分利用这一机遇所带给我们的技术、行业竞争力和技术精湛的员工，将这一业务不断发展壮大。我们希望能够进一步推动长期合作关系，未来能够服务于世界各地的项目。”

ABB电缆系统业务提供了统包解决方案，从设计、工程、供货、安装一直到试运营和维护。这项业务在2015年的独立收入达到了5.24亿美元，雇员约900人。其在瑞士卡尔斯克鲁纳的工厂拥有先进的水下和地下高压电缆制造和研发能力。本次资产收购交易中，包括一艘配备尖端技术的全新电缆铺设船，目前正在建造过程中。ABB的这项业务的历史已超过百年，其铺设的直流和交流线路遍布世界数百个地点。

ABB的Power Grid公司董事长Claudio Facchin说：“作为此次战略合作的一部分，ABB和NKT Cables将在未来的项目中进行合作，共同抓住该领域中的市场机遇，包括水下互联和直流输电线路。这项交易将简化并专注于Power Grids产品组合。”

交易预计将在2017年1季度结束，具体时间需根据监管部门的批准和结束条件的达成情况而定。Goldman Sachs担任ABB的独家财务顾问，Freshfields担任Bruckhaus Deringer的法律顾问。

**ABB – 瑞士**  
网址: [www.abb.com](http://www.abb.com)

## Repsol斩获荣誉

Repsol被著名的Petroleum Economist杂志评选为“年度最佳石化公司”，以此表彰公司的化学品业务战略和近几年开展的转型工作。Repsol的化学品业务、差异化高附加值产品的推出和地域多样性策略，尤其受到Petroleum Economist奖评审委员会的赏识。

此外，委员会还非常关注以下几个方面：通过投资实现其石化工厂所使用原材料的灵活性，Repsol在其化工厂中开展的现代化项目，以创新解决方案大幅提升了公司2016年的利润空间。效率提高、工厂的高可用性以及Repsol在其化学品业务中开展的运营改善工作，强化了公司实力，确保公司能够充分利用有利的行业条件，并使重要业绩指标得到改善。此外，由于利润空间和销售提升，在2016年上半年化学品业务的利润提到提升。

这一荣誉是Repsol化学品业务在过去一年中获得的第三项嘉奖。其它两项荣誉为欧洲聚合物联盟(Polymers for Europe Alliance)在去年六月颁发的2016欧洲最佳高密度聚乙烯(HDPE)生产商以及全面创新奖（这一奖项涵盖所有聚合物类型）。

Repsol的化学品业务以及所有其它业务单位全力以赴，打造出更安全、更高效、更具环境可持续性的能源系统，从而更好地满足社会需求。

**Repsol – 西班牙**  
网址: [www.repsol.com](http://www.repsol.com)

## Continuus Properzi 对抄袭发出警告

Continuus Properzi公司开发和推广的Properzi工艺主要应用于铝杆和铜杆的连铸和轧制领域，在行业内享有盛誉。但在公司近70年的历程中，所推出的产品不止局限在这一领域，还为有色金属行业设计出了其它创新系统。比如用于铅酸电池的铅条生产线或创新的铝锭生产线。

但在近几年，公司在国际行业媒体报道或商展中，却越来越频繁地发现未经授权的广告或宣传手册，其中展示的设备与Continuus-Properzi非常相似或完全一致，此外还会在未经许可的情况下使用Properzi品牌名称，有时候所使用的照片完全就是从Continuus-Properzi的资料中直接挪用。

就在最近，很多中国企业开始觊觎公司的自退火铜线专利制造方法。

Continuus-Properzi不仅希望能够严惩这一行为，还向有色金属领域中的所有相关方做出严正警示：Continuus-Properzi的所有生产线、设备、加热炉和系统产品，全部在意大利设计和制造，未与任何中国企业签订行业协议或向任何中国企业授权。

与Properzi品牌名有任何相似之处的名称，均为部分或全部仿造。

**Continuus Properzi SpA – 意大利**  
网址：[www.properzi.com](http://www.properzi.com)

## 马来西亚润滑油制造商大会



○ 在马来西亚大会中的Metalube团队

英国润滑油制造商Metalube在马来西亚吉隆坡的Saujana Hotel举行了亚洲团队大会。参会代表来自土耳其、阿联酋、印度、马来西亚、泰国、印尼和中国，几乎覆盖了全部地区。

商务总监Douglas Hunt说：“这种性质的活动具有很多重大意义。我们可以利用这个平台培训Metalube团队，分享新产品的开发信息和销售技巧。但是最重要的一点是，由于我们平时都分散在不同的地区，利用这个机会，我们能够共聚一堂，构建更密切的关系，分享个人体验。”

Metalube是一家有色金属拉拔油和维护润滑油产品制造商，同时还提供类型多样的腐蚀防护油和成型油。公司的产品常年出口其他国家，目前在中国、印度、巴西和阿联酋设立了分支机构。

**Metalube Ltd – 英国**  
网址：[www.metalube.co.uk](http://www.metalube.co.uk)

## 杜塞尔多夫国际线材和管材展，“成就卓越，走向世界”

这场在杜塞尔多夫举行的行业盛会具有悠久的历史，面向线材、线缆、管材、钢材和铁材领域，涵盖金属制造、加工及精加工等诸多行业。“成就卓越，走向世界”，这句响亮的口号充分体现了该展览的国际主旨。

杜塞尔多夫国际管材、线缆和线材展具有30多年的历史。作为行业内一流的商展活动，该展览已获得行业内大型跨国企业的充分肯定，其商业美名已跨越杜塞尔多夫的城市边界，传遍世界各地。杜塞尔多夫坐落在德国威斯特法利亚区，也是莱茵河北部地区的商业中心。如今这座城市已经发展成为一个行业创新平台，备受世界瞩目。

这一大规模展览活动还包括10场针对线材和管材行业的附属国际展览。但目前这些附属展览均使用统一标志，表明它们是杜塞尔多夫管材、线缆和线材展的

一部分。各展会的形象设计工作由主展会主办部门负责，确保本商展的外在形象整齐统一，彰显出它们是同一家族中的成员。

在设计附属展会的过程中，会充分考虑到格式、色彩和文字使用方面的特征，确保所有展会风格的整齐统一。Messe Düsseldorf GmbH公司中的金属和流体技术全球产品组合总监Friedrich-Georg Kehler说：“在内容和视觉形象方面，‘成就卓越，走向世界’组合专为杜塞尔多夫的国际管材、线缆和线材展以及10个附属国际展览而设计。所有设计均会彰显出它们源自同一家族。”

除了杜塞尔多夫的国际管材、线缆和线材展，“成就卓越，走向世界”组合中还包括多个附属展览，比如上海的中国管材展和中国线材展、印度孟买的管材

和线材展、俄罗斯莫斯科的管材和线材展、东南亚地区在泰国曼谷进行的管材和线材展、南美地区巴西圣保罗的线材展和Tubotech商展。这一展览组合目前已经走向世界各地，还将不断增加新成员。但无论是在德国、巴西、中国、印度、俄罗斯、泰国或美国，这些精彩纷呈的区域性附属展会的主办机构均为Messe Düsseldorf公司。但每次展会都是总部与海外分公司、国际行业和商业团体以及地方组织方共同努力的成果。这些附属展会针对其所属区域，成为当地重要的信息和贸易平台，并获得了广泛认可。

如需了解本次展会及其在世界各地的附属展会，欢迎浏览我们的官网[www.wire.de](http://www.wire.de)和[www.tube.de](http://www.tube.de)。

**Messe Düsseldorf GmbH – 德国**  
网址：[www.messe-duesseldorf.com](http://www.messe-duesseldorf.com)

## 高碳钢丝生产线



○ Eurolls 研发团队的持久创新

当今世界中，“发展”一词意味着对更好品质的期望。在高碳钢丝领域中，产品所使用的化学成分在不断改变，钢丝中的碳含量不断增加，这就意味着钢丝生产设备和整个生产流程也需要进行持续的创新。

提高钢丝机械性能也给高速拔丝设备带来了更大挑战，因为在这个过程中会产生高温。业内对拔丝工艺已进行了大量优化工作，包括新的模压角度和大幅提升的润滑油质量。但是拔丝设备目前配备的绞盘冷却系统却一直无法突破一定的限值。

为了攻克压辊和冷轧绕盘的设计和制造难题，Eurolls的研发部门推出了一项解决方案：在设备中加入一个专为高碳钢丝生产程序设计的新冷轧绕盘。

全新冷轧工艺的摩擦系数更低，配备了创新的钢丝润滑系统，产生的热量更低，从而会在压缩过程中降低钢丝温度。

Eurolls最近生产的所有拔丝设备均可与这一全新冷轧系统共用。此外，这些新生产线不仅拥有性能更加的绞盘冷却系统，还配备了全新内部涂层设备，这也是Eurolls研发部门的创新开发成果。该内部涂层设备可以减少沉积和铁锈的产生，同时提高热传导性（冷却能力相同，但是冷却水的用量更低）。

**Eurolls SpA – 意大利**  
网址: [www.eurolls.com](http://www.eurolls.com)

## 新任总经理

德国哈瑙公司Windsor Kunststofftechnologien GmbH任命Peter Kochs（49岁）为公司新总经理。这家公司是台湾富强鑫集团的欧洲代表，主要面向液压及伺服液压注塑成型机领域。

此外，公司还是全电动注塑成型机生产商 JSW Ltd（日本东京制钢所）的德国代表。由于前总经理Reiner Nowacki先生在2016年6月意外辞世，这一重任便落在了Kochs先生的肩上。

Kochs先生在2008年加入Windsor公司，在此之前担任公司的销售首席运营官和授权签字人。现在，新职务意味着他将承担起更大的责任。

**Windsor Kunststofftechnologien GmbH – 德国**  
网址: [www.windsor-gmbh.de](http://www.windsor-gmbh.de)

## Huber拓展生产能力

阻燃添加剂（FRA）业务是 J M Huber Corporation（Huber）公司下属部门 Huber Engineered Materials 的业务范围之一。该业务部门宣布，其最新收购的Martinswerk工厂（位于德国贝格海姆）将增加10%的Martinal®微细析出氢氧化铝产品的生产能力。

新增产量预计将在2017年第三季度竣工。在此之前，Huber已在美国阿肯色州Bauxite的工厂中，将析出氢氧化铝的生产能力提高了20%。

就在Huber开始投资贝格海姆工厂扩容的七个月前，公司在二月份还收购了Martinswerk GmbH公司，包括其在Magnifin Magnesiaprodukte GmbH & Co KG合资公司中的权益。

Huber的FRA部门副董事长兼总经理 Jerry Bertram说：“我们针对这一业务推出了一项长期战略，其中包括一系列扩容规划，本次投资也是该规划中的第一步。”

“在我们目前实施的全球发展规划中，生产能力扩容是其中的一部分，体现了Huber致力于非卤化微细析出阻燃剂市场的决心，让我们可以更好地满足重要客户不断提升的要求。”Huber的FRA欧洲业务总经理Martin Schulting补充道。

Huber是微细析出氢氧化铝和氢氧化镁领域中的全球领军企业，这两种产品均是非卤化微细析出类阻燃剂。公司的FRA业务部门的生产工厂分别位于北美（4家）和欧洲（2家）。

30多年来，Huber一直都是非卤化阻燃剂和抑烟剂领域中值得信赖的供货商。

**J M Huber Corp – 美国**  
网址: [www.huber.com](http://www.huber.com)

## T&T人事新任命

Joe Maglich最近加入了T&T Marketing Inc公司，担任大西洋中部地区各州分部的客户经理。他毕业于俄亥俄大学拉斯工程学院，拥有化学工程学位。他曾效力DuPont公司，时间超过六年，主要从事技术销售和客户服务工作，后任职于其资产分拆的Axalta Coating Systems公司。

他目前居住在费城大区，闲暇时间喜欢打鼓、弹吉他、钓鱼、玩篮球和旅行。

**T&T Marketing Inc – 美国**  
网址: [www.ttmarketinginc.com](http://www.ttmarketinginc.com)

## 更多符合Davis Standard的设备即将面世

为了更好地在东南亚薄膜市场中拓展业务，印尼薄膜生产商PT Kencar Sukses Investama公司在其印尼西多阿佐的工厂中增加了两台Davis Standard挤塑薄膜设备。

加上新增的这两台，该公司在短短5年的时间内就拥有了4台Davis Standard的设备。公司目前已在东南亚地区推出了多款创新型食品包装薄膜产品，推动公司快速发展，拥有了强大的客户基础。

Kencar是东南亚地区首家推出五层CPP薄膜的企业。此次新增Davis Standard设备后，公司将成为该地区首家具备六层薄膜生产能力的企业。与其他吹塑薄膜产品相比，这种高阻隔性六层CPP薄膜和CPE薄膜厚度更均匀，清晰度更高。

Kencar 总裁 Eddy Soelayman 表示：“东南亚地区的软包装材料市场发展很

快，年增长幅度超过8%。而Kencar以高于50%的发展速度超越市场增幅。我们目睹了CPP市场的转型，从常规产品向具有卓越阻隔性、金属附着性、光泽和热密封性的高性能产品过渡。

目前我们生产的五层CPP薄膜具有和CPE类似的热密封性能，在光泽度和金属附着性方面也非常优秀。

通过新增设备，我们可以更进一步，生产具有独特阻隔性能的CPP薄膜产品，可以让转换器降低厚度，同时减少转换步骤，节省成本。”

与工厂中原有的两台Davis Standard的挤塑薄膜设备相比，新产品的速度更快。

新增的两天设备都配备了新一代DSB®屏障螺杆，可适用于Kencar使用的各种原材料和各种薄膜应用。通过进料块和

模具技术，薄膜结构可具有最多七个不同的层。

卷绕机中将增加烫平辊，可确保卷绕的一致性。Davis Standard久经考验的技术对Kencar公司而言非常重要。

通过这些技术，公司生产的薄膜将具有更高的表面处理保留性、更好的金属附着性和更佳的水蒸气和氧气阻隔性能。这些性能对于柔性包装产品而言都非常重要。

Soelayman先生补充道：“Davis Standard是一家优秀的公司，通过他们提供的创意解决方案，我们可以不断向市场中推出独一无二的薄膜产品。他们深谙聚合物加工行业，非常了解如何将我们的想法变成最终产品。”

Davis-Standard LLC – 美国  
网址: [www.davis-standard.com](http://www.davis-standard.com)

## 第六届印度国际线缆和线材展

2016年10月，印度第六届三大行业展在孟买会展中心拉开帷幕，分别为：印度线材和线缆展、印度管材展和印度冶金展。

在为期三天的活动中，展示了线材和缆线行业、管材加工、管材贸易以及合金领域的最新技术。展览面积接近8000平方米，参展商406家，其中很大一部分参展商来自印度本土，展会特别为海外展商布置了大型国家展厅，包括德国、澳大利亚、意大利、美国和中国。

三大商展同时进行，这种形式使参展商和访客都受益匪浅。展会每天都热闹非凡，各个展位前都有很多访客进行咨询交流，促进了进一步的业务关系。

参展商反馈本次展览期间的访客质量普遍很高，很多在展位处咨询的访客，都是企业中的决策者或具有深厚技术知识的专业人士。

本次展会吸引了超过12,300名贸易访客，与去年相比增加了28%。

本次三大展期间，主办方Messe Essen和Messe Düsseldorf India还同时推出了India Essen焊接和切割展。

下一届印度三大展的举办时间为2018年11月27日至29日，举办地点为孟买的庞贝会展中心，届时India Essen Welding & Cutting展将继续与管材、线材和冶金展同时举行。

Wire & Cable India – 印度  
网址: [www.wire-india.com](http://www.wire-india.com)

## Delfingen在摩洛哥开设新工厂

Delfingen是一家全球性汽车供应商，同时也是车载网络保护解决方案和流体输送管道的知名制造商。公司在摩洛哥丹吉尔市的新工厂刚刚落成。这座城市也被很多人比喻为北非的底特律。

公司自2000年开始进入摩洛哥市场，首先在卡萨布兰卡成立了一家制造工厂，随后在2003年又在丹吉尔市设立了一个物流中心。此次新成立的工厂面积超过8500平方米，位于丹吉尔自贸区(TFZ)中，代表着公司正在迈入具有重要战略意义的新阶段。新工厂将大幅拓展Delfingen在该地区的行业地位。

新工厂目前的工作人员数量已超过100人，充分满足了公司的行业卓越行标

准，将专用于为制造汽车线速保护的先进管线和套管，同时还与Hutchinson公司合作提供密封系统的组装服务。

新举措体现了公司的一贯承诺：通过在客户附近建厂，为客户提供持续服务，以更快的反应速度实现更优质服务。

公司的首席执行官 G erald Streit 说：“摩洛哥地区的汽车工业实现了令人振奋的腾飞，我们对该国的政府也非常有信心。结合我们在过去15年中的本土制造经验，实施我们的决策，在未来的三年中对该地区进行大力投资。”

集团董事长Bernard Streit和执行委员会的G erald Streit出席了工厂剪彩仪式。



○ 新工厂剪彩仪式

出席仪式的人还包括来自丹吉尔自贸区以及当地政府部门的贵宾、客户和合作伙伴代表。

Delfingen Industry SA – 法国  
网址: [www.delfingen.com](http://www.delfingen.com)

## 投资25万英镑开发最新环节技术

William Hughes是弹簧和弯曲线材零部件的专业制造商，主要服务于全球汽车和航空航天领域。该公司最近已投资25万英镑，用于开发高科技双机器人焊接单元。

新焊接单元将使用Bauomat公司的Fanuc型号机器人，安装工作全部在William Hughes多赛特Stalbridge的英国新总部中进行。这个单元中配备了先进的焊接监控和记录设备，确保了质量和一致性，从而始终向客户提供最高标准的产品。

公司的工程总监Emma Burgon表示：“一直以来，我们始终都能成功地赢得汽车行业客户的业务。但这也意味着我们必须座架焊接方面提高生产能力。”

Fanuc双机器人焊接单元很显然我们必然的选择，因为我们工厂中已经配备了多个Fanuc设备，我们熟悉这些设备的程序和操作。双机器人单元的焊接程序所需时间将缩短超过一半，这对

我们的生产能力而言是一个巨大的提升。”

每周除周末之外，新焊接单元可24小时运转，目前正用于批量制造一款SUV的座椅骨架。这一特殊的焊接设备拥有56个焊头，使用25根电线。双机器人单元提供的成本质量更高，稳定性更强。此外，这个焊接流程制造零部件的速度也更快，将之前3分45秒的单位零件生产速度，提高到1分40秒。此外，为了最大限度地提高整体速度，William Hughes的工程师采用最新CAD软件技术设计焊接装配配件，制造过程中使用了CNC研磨设备。这项对最新制造技术的新投资，是公司持久发展项目的延续。



○ 双机器人焊接单位

2014年10月在多赛特Stalbridge落成的87000平方英尺新工厂，也是该项目中的一部分。公司的扩展步伐还包括扩建保加利亚工厂，该地区的工厂主要服务于欧洲客户。

William Hughes Ltd – 英国  
网址: [www.wmhughes.co.uk](http://www.wmhughes.co.uk)

## 英国缆线紧固箍和线束产品制造商庆祝十年生日

Convert Ltd是英国一家缆线紧固箍和线束产品制造商，今年正值公司成立十周年。

公司2006年成立于肯特，最初雇佣人数只有9人。在过去的十年中，公司实现了长足发展，现有员工30人，营业额超过100万英镑。

公司主要面向汽车、公共交通和科学/医疗领域，生产用于汽车头灯和尾灯、火车站闸口以及各种科学设备中的线束。

很多行业知名企业都是公司的客户，包括Wipac、Bibby Scientific Ltd、GKN Hybrid Power、Cubic Transportation和OEM Automatic Ltd以及众多知名豪车和跑车制造商。

总经理Dave Lord说：“公司喜迎第十个生日，让我们感到格外高兴。我想借此机会感谢公司的客户和员工，感谢你们在这十年中的承诺。从公司成立之初起，我们就很幸运地与众多优质客户合作。正是在他们的帮助下，我们才能扭转劣势来应对各种工程挑战。”

与此同时，公司也很幸运地吸引了高水平员工，他们个个都是电气工程领域中的专业人士，让我们能够生产出满足客户标准的高品质缆线紧固箍和线束产品。”

Convert为拥有快乐的团队、满意的客户和大家庭氛围而感到自豪。公司最年轻的员工Bianka Makroczi今年只有22岁，他在2015年5月加入公司。

公司最年长的员工Barbara Wenman今年79岁，从公司创立之初就与我们并肩战斗。

Convert还与当地的学校开展了密切合作，为学生们提供积累工作经验的机会，还曾赞助当地的足球俱乐部，支持当地的慈善组织Kent Air and Rescue。

放眼未来，Dave Lord说：“希望Convert能够继续引领行业发展，继续生产出更高质量的线缆紧固箍和线束产品。我们最终的愿望是：一如既往地让员工满意，让客户满意。”

Convert Ltd – 英国  
网址: [www.convertltd.co.uk](http://www.convertltd.co.uk)

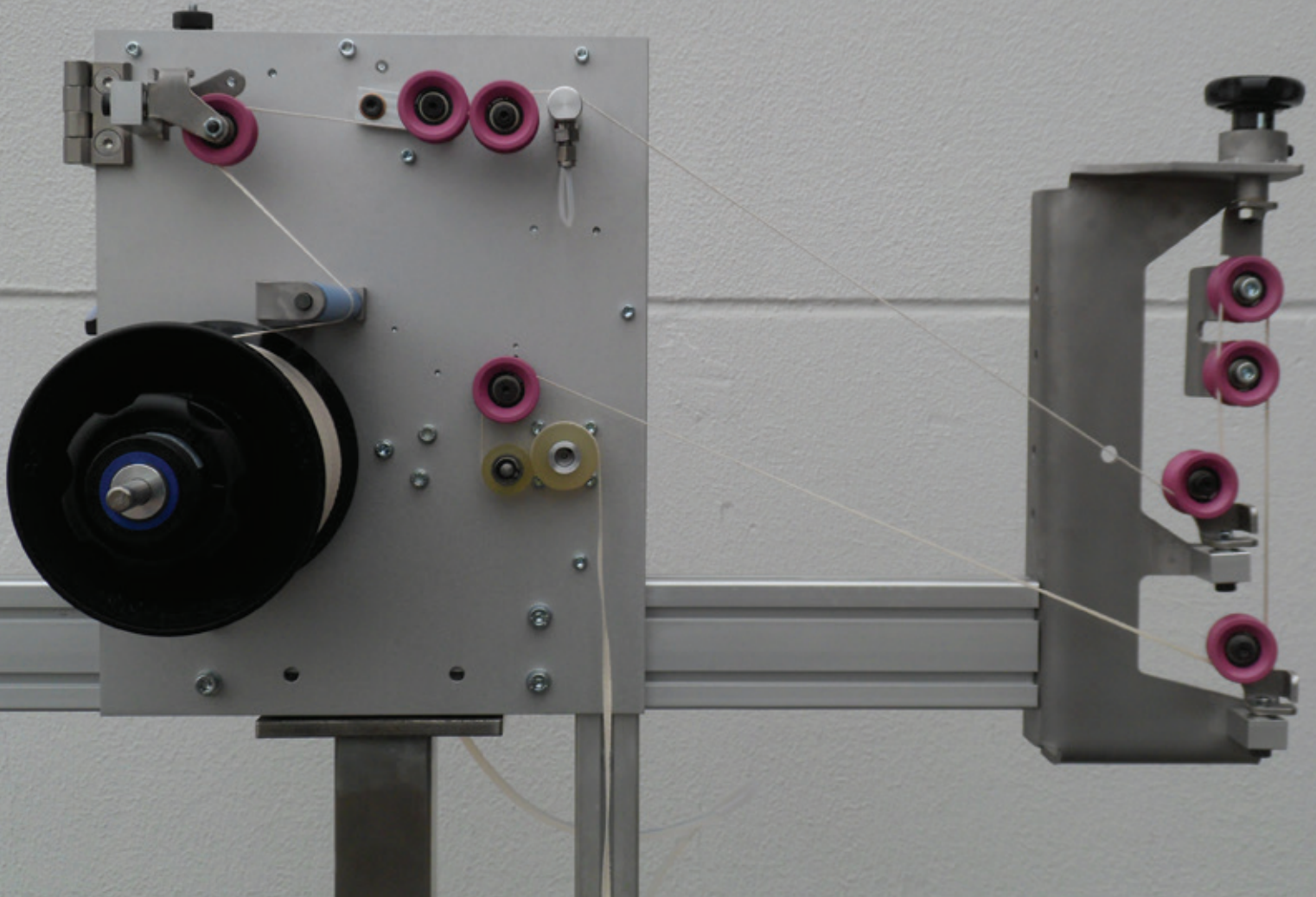
## 深厚经验和更强大的管理力量，成就更伟大的未来

Koch的管理队伍正在不断壮大，为未来发展做好准备。销售总监Thomas Voss和技术总监Harald Udelhoven的加入，让管理合伙人Jochen Koch如虎添翼。

由这三位领导人掌舵，公司将努力发展成为全球市场中的创新领军企业。Thomas Voss是一位经验丰富的销售专家，他在阔别公司四年后，在2016年9月1日再次回到Koch的大家庭。他在线材设备领域中拥有深厚经验，其中效力Koch的时间就长达34年。他今后将以销售总监的身份，强化公司的销售工作。Harald Udelhoven将担任技术总监，打造一个更加完整的团队。这位55岁的行业精英曾在多家知名电气工程企业中效力。他在大学期间学习的是机械工程系制造技术专业，此外，还选修了商业管理专业。他上一份工作是担任全球质量管理负责人和高真空产品线负责人。经验、创新、实力和更高目标：这就是Jochen Koch公司的“最佳组合”，让公司能够更好地应对日益复杂的全球市场所带来的挑战。Thomas Voss目前已开始了他在销售领域中的管理工作。

Ernst Koch GmbH & Co KG – 德国  
网址: [www.koch-ihmet.de](http://www.koch-ihmet.de)





○ The new LS-WST lubrication system from GEO-Reinigungstechnik

## Lubrication system for wire

THE new LS-WST lubrication system is designed to apply liquid media or in liquid dissolved solids via a metering system to wire both with round and rectangular cross sections.

The system consists of two modules. The drive unit for the textile tape includes a metering system, the liquid dispenser and the control. The metering can be designed either as gravity or micro pump feed of lubricant.

The actual application or process unit is separate and, due to its low space requirement of approximately 100mm, can be integrated into virtually any production line or in wire application lines, eg MIG-MAG welding machines.

Via the metering system liquids at a viscosity below

100mPas in the range of 0.1 to 10ml/min are applied to a textile tape.

The tape is then looped around the wire and the liquid is applied uniformly to the wire surface. The continuously moving, infinitely variable speed of the tape ensures the tape in contact with the wire is always clean.

As consumables round and flat textile materials up to 10mm width with appropriate tensile strength may be used. The LS-WST system is suitable for wire diameters ranging from 0.1mm (0.004") to 10mm (0.4") (others on request). The line speed and consumption of materials (liquid agent/tape) will vary according the application.

**GEO-Reinigungstechnik GmbH – Germany**  
**Website:** [www.geo-reinigungstechnik.de](http://www.geo-reinigungstechnik.de)

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## In-line profile and shape measurement and monitoring

AS a pioneer of on-line measurement committed to extensive research and development activities, Zumbach Electronic has continuously been a manufacturer of on-line measuring and control systems.

The top priority at Zumbach is customer relationships through local presence combined with proven high quality products, services, personal consulting and support.

The company's Profilemaster® systems are developed from a core set of proprietary mega pixel camera/laser modules and software technologies.

The application of these technologies has been adapted to serve the specific measurement, monitoring and flaw detection needs of all profiles, shaped wire, cables, tubes made of plastic, rubber, metal, steel and other materials.

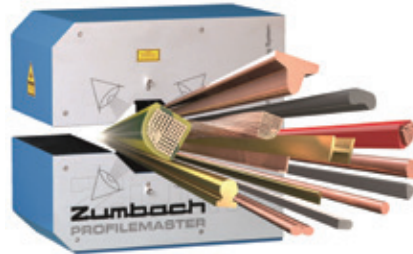
Customer benefits include:

- Provides 100 per cent inspection
- Reduces start-up time
- Increases the accuracy of the end product
- Improves process control
- Reduces scrap
- Saves raw material and post processing costs
- Increases product quality, ie higher end customer satisfaction
- Integrates in a seamless way the PC-based system with network

Depending on the Profilemaster model, one to eight laser/camera modules measure the cross section of the moving profile on-line and continuously.

A powerful PC-based processor combines straight lines and radii extracted from the images of the single cameras to yield the momentary cross-section of the profile.

All relevant dimensions such as width, height, angle and radius or other geometric quantities are computed to characterise the full cross-sectional picture. An operator-friendly graphic display of this data allows the product to be monitored during the production.



○ The Profilemaster system from Zumbach

The nominal values for the profile can be directly imported from the CAD design files, which allows easy and problem-free configuration of the device.

Changes in speed and twist within normal limits have no influence on the measurement.

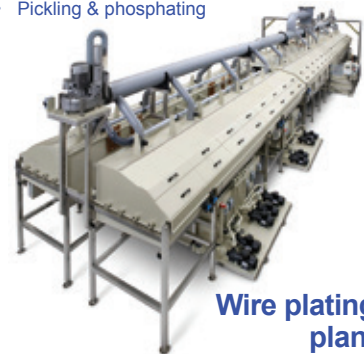
Special regard was taken to develop user-friendly and flexible software for the Profilemaster system. The program has three working modes:

- Operation: For measurements during production. All operational steps have been simplified as far as possible. The desired functions for the measurement of a particular product, eg conditions for start/end and records, are only entered once and stored in the memory together with the measured data
- Entering product data: Enter the measurement requirement and define how the measured data should be processed. The flexible functions in the software program can be configured to allow products to be measured exactly as the customer requires
- Service and system configuration: The functions in the program can be selected according to the operator's requirements during the initial installation of the system. Moreover, the default values used for pre-processing can be changed to suit each product

**Zumbach Electronic AG – Switzerland**  
Website: [www.zumbach.com](http://www.zumbach.com)

[www.candorsweden.com](http://www.candorsweden.com)

- Electrolytic plating
- Candojet hot water cleaning
- Electrolytic & Ultrasonic degreasing
- Welding wire cleaning and copper coating
- Pickling & phosphating



Wire plating plant



Hot water cleaning



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## Accelerating Cat 8 cable adoption

ADVANCED circuit board technology enables a new patented RJ-45 plug to ensure Category 8 Ethernet cabling performance up to 2,000 MHz.

Category 8 Ethernet cable will play a major role in meeting burgeoning needs for high-speed communications, whether in the data centre, voice, video or other high bandwidth applications that run on copper cable for distances up to 30 metres.

To ensure that Category 8 adopters will effectively reach data speeds of up to 40 Gb/s – four times the speeds of many of today’s users – OCC (Optical Cable Corporation) is introducing a new RJ-45 plug with integral circuit board technology that

provides advanced control of crosstalk, return loss, and other impediments, ensuring consistent performance at higher frequencies up to 2,000 MHz.

Prior to the introduction of this product cable engineers viewed the challenge of transmitting data at rates of up to four times faster over a standard RJ-45 connector as a major concern.

“Essentially, the new plug contains technology that provides advanced control of plug performance,” said Derrick Stikeleather, OCC copper connectivity manager and member of the TIA Engineering Subcommittee TR-42.7.

“In a conventional category style plug,

the plug wires must be arranged in specific positions, leading to variations in performance. But when a circuit board is used, it basically eliminates the possibility of plug wire variations. It also means that electrical properties transition from a cable to a terminal in a more controlled fashion.”

Mr Stikeleather added that the new, proprietary technology utilises a higher performance type of circuit board material than what is contained in a standard connector.

“Without this, achieving quality data transmission rates of 40 Gb/s would not be possible,” he explained.

The new plug, which was recently granted a patent for circuit board layout and the advanced materials used in its construction, is suitable for direct-attach, high-speed links and data centre server connections.

He also said the plug provides consistent and reliable terminations that are guaranteed to meet or exceed the recently approved Category 8 standard when paired with compliant Category 8 cable.

The new RJ-45 plug model is fully backward compatible with existing RJ-45 infrastructure used by a majority of Ethernet connection ports, including Cat 6A, Cat 6 and Cat 5e cabling. It is field installable, and should be familiar to many cable installers.

The plug is also compatible with OCC’s family of ruggedised RJ-45 connectors, a family of receptacles, plugs and back shells that enables users to extend their Ethernet platforms into harsh industrial and military operating environments.

**Optical Cable Corporation – USA**  
Website: [www.occfiber.com](http://www.occfiber.com)

## Italian technology for straightening and cutting

Engaged in the designing and production of equipment for the cold working of wires, tubes and metal profiles for more than 20 years, Violi Srl boasts today an established presence on the main international markets thanks to a complete range of products that have allowed the company to gain the approval and trust of numerous customers.



○ Straightening and cutting machine for wires, tubes and complex profiles

Among the various lines offered by the company is one dedicated to the straightening process, which consists of equipment for the straightening of tubes or rods made of steel or other metals having a circular or complex profile, ensuring excellent results and high productivity thanks to technologically advanced solutions and high quality components.

MRT: straightening machine with hyperbolic rollers for tubes or rods in steel or other metals

RPD: for square and rectangular profiles in steel or other metals

MRTV: Wire-straightening machine with fly cutting system designed to straighten and cut wires automatically in aluminium, copper, brass, steel, silver and gold

RFTS/RFTC: straightening machines with saw blade or shears cut for round and complex profiles up to 10mm

MRTSA: straightening machine with saw blade cut for circular and complex profiles up to 25mm

**Violi Srl – Italy**

Website: [www.violimacchine.it](http://www.violimacchine.it)

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## Sikora spark tester with removable self-test module

ACCORDING to European standards, openly operated measuring and testing equipment has to be checked regularly. Therefore, spark testers are tested with regard to the accuracy of the supplied high-voltage, the short circuit current and function (sensitivity).

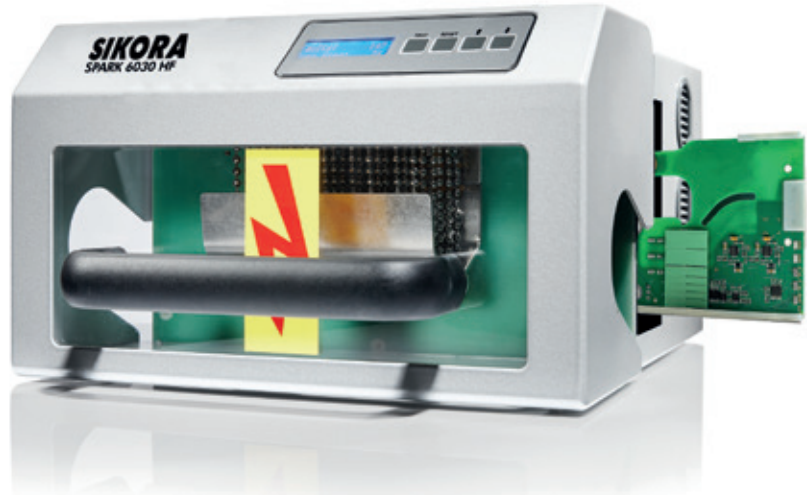
The Sikora spark tester Spark 6030 HF offers (optionally) a three-step self-test and calibration system including the Sikora App for mobile monitoring and analysis of the measuring results. As each test probe has to be calibrated, the testing module has to be controlled regularly as well.

To support this process, Sikora developed the module of the Spark 6030 HF further. New is the easy-to-change module that combines all testing functions and which can easily be exchanged from an additional opening in the housing of the Spark 6030 HF.

In order to meet the requirements of the ISO 9001 standards, Sikora recommends a yearly calibration of the spark tester by simply exchanging the test module.

Due to the fact that all functions are directly mounted at the module, the complete module is exchanged for calibration. Therefore, a submission of the complete device to Sikora as well as the assignment of a service engineer is not necessary.

As for the previous version of the module, the sensitivity and short



○ The spark tester Spark 6030 HF with removable self-test and calibration module

circuit current tests are generated. For the sensitivity test, 20 discharges are simulated in 20 seconds. All of these discharges have to be completely detected by the spark tester.

For the short circuit current test, an error caused by the contact of a user and the bead chain electrode during the operation is simulated. Here, a defined value must not be exceeded in order to guarantee the safety of the user.

The calibration module measures continuously the accuracy of the testing voltage. The standard for spark testers requests an accuracy of  $\pm 5$  per

cent. The test is successful if this criterion is met.

**Sikora AG – Germany**  
**Website:** [www.sikora.net](http://www.sikora.net)

## Redesign of a classic from Tecno Impianti

Tecno Impianti Srl of Italy is a major designer and manufacturer of wire drawing machinery for different sectors of the wire industry.

Its newest feature is the redesign of its successful wet wire drawing machine Model TI-310. The machine is to be utilised for production of CO<sub>2</sub> welding wire. It will work with a horizontal spooler and the line will be completed with coppering tank and dancer.

The drawing machine Model TI-310 is equipped with 11 wet drawing passes plus one dry drawing pass at the entrance, 310mm capstan and major sized cone-holding shafts. Tecno Impianti is also present in the

wire drawing machinery sector with its TR Series of straight-line multi-pass wire drawing machines, the MV Series of vertical bull-blocks, the inverted bull-block Model MVC and the MO Series of horizontal-axis wire drawing bull-blocks for CHQ wire.

All its machines are designed and manufactured by the company, equipped with components of leading brands and can be offered in many different models and configurations, with a tailor-made concept.

**Tecno Impianti Srl – Italy**  
**Website:** [www.tecnoimpianti-italy.com](http://www.tecnoimpianti-italy.com)



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## New extrusion head features (MAGS) adjustment

GULL Tool has introduced the new 500 Series crosshead with MAGS gum space adjustment. The 500 Series is designed specifically for the flow characteristics and unique processing challenges of elastomeric compounds.

One of the key features engineered by Guill on this new crosshead design is the mechanically assisted gum space (MAGS) adjustment system. This new method of gum space adjustment allows the operator to make an effortless adjustment from a single point using a common socket wrench.

It removes the need to struggle with multiple nuts and bolts in order to adjust gum space, which leads to faster adjustments. The visual indicator on the core tube allows the operator to see how far the gum space has been moved, making those adjustments much more accurate and repeatable.

The hardware-free and patented cam lock design of the new 500 Series from Guill means no time is wasted unbolting and re-securing fasteners for disassembly and re-assembly. Only half of a rotation of the cam nut is required to loosen and automatically extract the deflector from the head body, which is another time saver. Also, with no undercuts on the deflector, there are no material hang-ups when extracting the deflector, allowing for faster and easier cleaning and changeover.

The 500 Series also features the latest Centre-Stage concentricity adjustment system that significantly reduces pressure on the tooling, allowing easier and more precise concentricity adjustments without loosening the face bolts. Easy-Out inserts for the adjusting bolts also allow simple replacement of locked or damaged adjusting bolts, which further saves on repair and downtime.

Another innovative feature of this new rubber/silicone crosshead is a cast aluminium liquid-fed cooling sleeve that allows the user to switch out the cooling jacket in the event of a line obstruction, again reducing downtime compared to traditional integrated cooling systems.

### AVC1500 series of portable cable storage reels

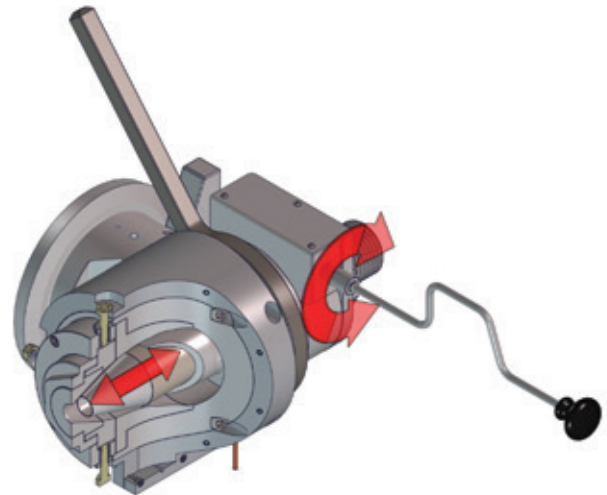
The AVC1500 series of portable cable storage reels from Hannay Reels features rugged steel and aluminium construction with a non-reflective matte black finish.

The reels come with permanently attached standard direct cranks and velcro cable fasteners.

The manual rewind models feature spring actuated pin-lock and cam-lock drag brake.

Optional heavy-duty locking caster wheel set, frame mounted carry handles, and divider discs can be added upon request.

**Hannay Reels – USA**  
Website: [www.hannay.com](http://www.hannay.com)



○ Guill Series 500 crosshead with (MAGS) adjustment, specially designed for the flow characteristics of elastomeric compounds

The 500 Series crosshead with MAGS gum space adjustment is a drop-in replacement on most existing NRM lines, however this crosshead design can also be adapted to fit any extruder design or line layout.

The addition of a newly designed flow inlet channel reduces the shear and heat that is generated as the materials are being processed. This leads to lower head pressures, allowing the material to move through the head in a much more balanced and even flow.

All crossheads supplied by Guill are furnished with a tool kit for assembly and disassembly as well as a detailed operator's instruction manual.

**Guill Tool and Engineering – USA**  
Website: [www.guill.com](http://www.guill.com)



○ One of the new AVC1500 series portable cable storage reels

# Cables

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## Goodwin's new take on an industry standard

GOODWIN Machinery, in collaboration with Cable & Wire Technical Services, has designed and manufactured a rod breakdown machine that is based on the industry standard Winget Syncro F-13.

This innovatively designed machine was manufactured on time and within budget and is now running "very successfully" in a factory in Europe.

This CWF-13 non-ferrous rod breakdown machine can draw down from 8mm copper or 9.5mm diameter aluminium and has many features like the small floor space required (4.6 x 1.55m), a top production rate of 30.6 MPS, and many more.

The design, manufacture and assembly was all done in the UK, the parts being manufactured using a mix of Goodwin Machinery and Cable & Wire preferred suppliers, with the final assembly and test being performed at Goodwin's Bolton factory.

The test run was carried out in the presence of the customer, who noted how quiet the machine was running. This can be attributed to the fact that all the gears are case hardened and ground, and the design of the machine facilitates the use of helical gears with no back-shaft/hypoid or spiral bevels.

The machine comes with an optional lubrication system for either copper or aluminium plus an optional pay-in stand.

There is also a low-noise screw-type oil pump for the main gearbox which fits neatly to the back of the machine, making it ideal for maintenance access, filter cleaning, etc. The machine is also complete with a 300HP/constant torque motor and drive.

This machine is a suitable replacement for existing rod breakdown machines, with the team of engineers/electricians being able to synchronise with any existing down line equipment. However, in the event of the customer wanting a complete line, Goodwin can also supply new annealers and spoolers with all interface wiring and controls.



○ The new machinery from Goodwin

**Goodwin Machinery Ltd – UK**

**Website:** [www.goodwinmachinery.co.uk](http://www.goodwinmachinery.co.uk)

## Specialists in straightening and cutting machines

Delisi specialises in manufacturing automatic straightening and cutting machines for smooth and ribbed wires from 1 to 20mm in diameter.

Its machines are characterised by rapid change of diameter, rapid change of lengths and fast set up: about one minute to change the diameter of the work. The spinner is supplied with a straightening unit of pre-regulated jaws for each diameter of wire to be worked.

This allows installation of a suitable straightening unit, according to the wire to be handled, and the spinner will be ready to work without wasting material and time. Delisi machines do not damage the wire.

The wire in the spinner is straightened through a series of bends that do not damage it while it is moving.

With the flying cut, the shears run during the cut. After finishing the cut, they quickly return back to the starting point, without the wire stopping.

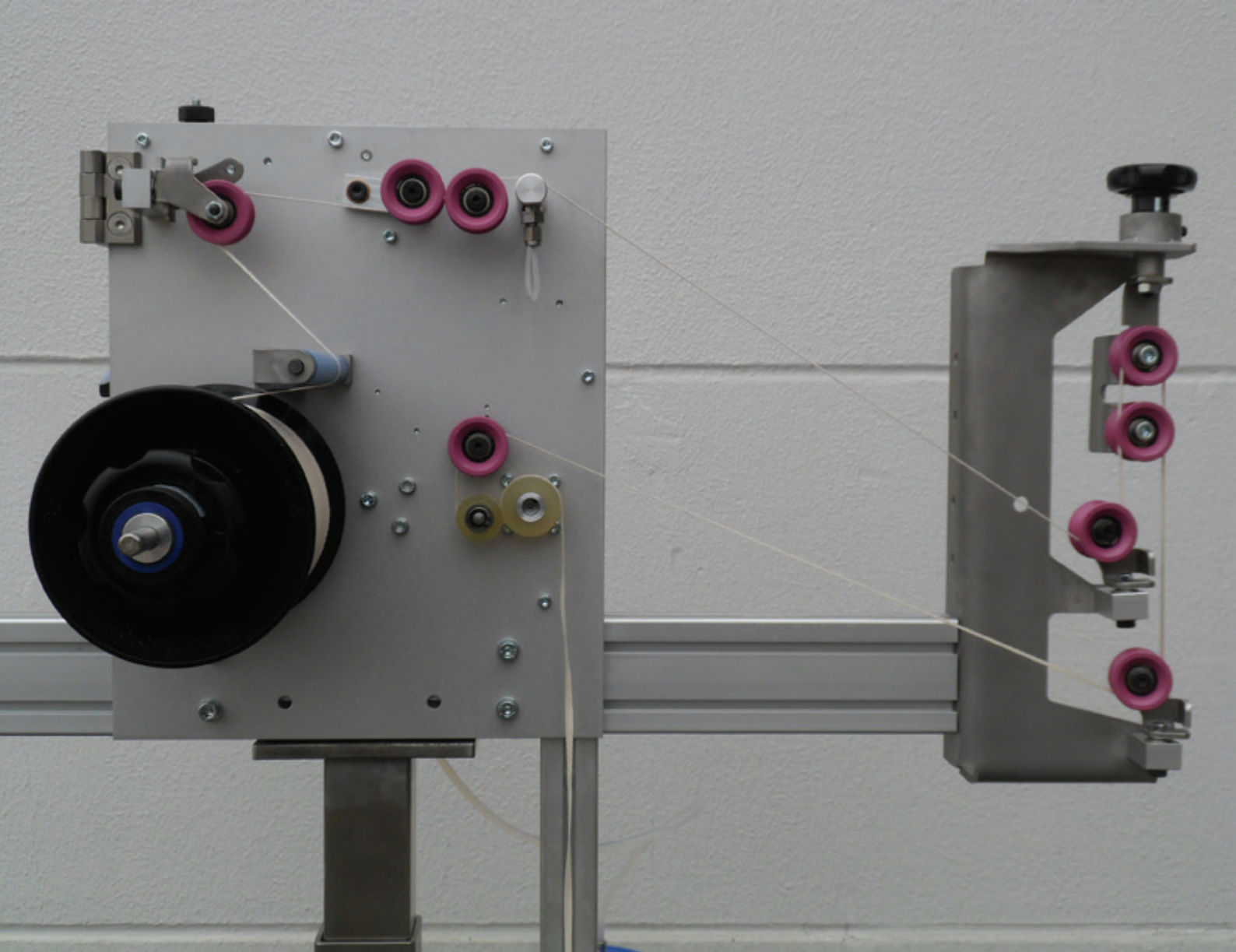
For a high number of short cuts, for example when working electrodes, Delisi can supply the machine with a continuous cutting disc, so the cutting speed is higher and the maximum production of 400 pieces per minute can easily be reached.

The machines can be supplied with an electronic programmer, different types of pay-offs and rod collection beds, and other special devices.

**Delisi Srl – Italy**

**Website:** [www.delisisrl.com](http://www.delisisrl.com)





○ 来自GEO-Reinigungstechnik的新型LS-WST润滑系统

## 线材润滑系统

新型LS-WST润滑系统设计用来通过计量系统为圆形或矩形横截面线材涂装液体介质或者液体溶解固体物。

系统由两个模块组成。用于纺织带的驱动装置包括一个计量系统，液体分配器以及控制器。计量可通过自流或微量泵供给润滑剂。

实际的应用或运行装置是独立的，因为只需约100毫米的空间，几乎可以集成到所有生产线或线材应用线，如MIG-MAG焊机。

通过计量系统，精度低于100mPas的液体以0.1到10毫升/分钟的速度涂装到纺织带上。

然后纺织带绕线材周围循环，液体均匀的涂装到线材表面。

纺织带连续的移动以及无限的变速确保纺织带与线材的接触是很干净的。

可能会用到抗拉强度适中的宽度为10毫米的圆形和扁型纺织材料。LS-WST润滑系统适用于直径0.1毫米(0.004")到10毫米(0.4") (也可以根据需求定制)的线材。

根据用途不同，线速度和消耗的材料也不相同。

**GEO-Reinigungstechnik GmbH – 德国**  
网址: [www.geo-reinigungstechnik.de](http://www.geo-reinigungstechnik.de)

## 在线截面和轮廓测量和监控

Zumbach Electronic公司是一家在线测量和控制设备的知名企业，其产品广泛应用于各种研发领域。

客户关系一直是Zumbach关注的第一要务。为此，公司在提供高品质产品、服务、个别咨询和支持的同时，又以广泛的地域覆盖实现就近服务。

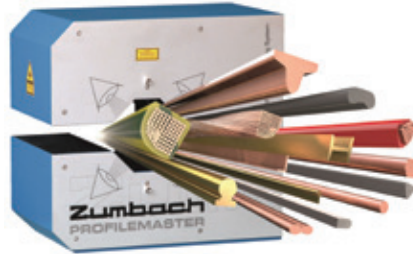
公司新推出的Profilemaster®系统，其设计基础是公司专利的核心产品百万像素照相机/激光模块和软件技术。通过这些技术，设备就能够对不同截面和轮廓的线材、缆材和缆材进行具体的测量、监控和探伤检测。适用的材料包括塑料、橡胶、金属和钢等。

设备的优势包括：

- 可进行100%的检测
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- 提高成品的精确性
- 提高程序控制
- 减少碎屑
- 节省原材料和后加工成本
- 提高产品质量，实现更高的客户满意度
- 可将基于电脑的系统与您的网络无缝整合

Profilemaster各型号会拥有1-8个激光/照相模块，对移动的截面进行持续的在线测量。拉直生产线中结合了一个基于电脑的强大处理器，从各照相机的图片中抽取半径图像，生成材料的瞬时剖面图。

设备还会计算所有相关的尺寸，比如宽度、高度、角度、半径和其他几何未知量，最终定义出一个完整的截面图像。设备配有一个便于操作的图形显示器，将这些数据显示其上，确保在生产过程中对产品进



来自Zumbach的Profilemaster系统

行监督。可从CAD设计文件中直接输出截面图的名义数值，可对设备进行简单便捷的配置。

在常规限值的范围内更改速度和扭转幅度，不会对测量造成影响。

公司还为Profilemaster系统开发出灵活的用户友好型软件。这个程序拥有三个模式：

- 操作：用于在生产过程中进行测量。所有操作步骤已经进行最大限度的简化。对具体产品进行测量时所需要的功能，比如启动/终止条件和记录，只需输入一次，就可以和测量数据一体保存在记忆体中。
- 输入产品数据：输入测量要求，定义测量数据处理的方法。软件程序的功能灵活，可以通过配置，准确地按照客户的要求对产品进行测量。
- 服务和系统配置：在系统的初始安装中，可以根据操作员的要求对程序功能进行选择。此外，预加工使用的默认值可以根据每一种产品进行更改。

Zumbach Electronic AG – 瑞士  
网址: [www.zumbach.com](http://www.zumbach.com)

## 拉直和切割机领域的专家

Delisi公司是制造拉直和切割机的专业企业，其产品可对1-20毫米直径线材进行加工，光滑和棱纹表面均可使用。这款设备可快速切换直径和长度，进行快速设置，只需一分钟就可改变加工直径。之所以能具备这样的功能，是因为自旋体配备的拉直单元，其入口已对每一种将要加工的线材直径进行了预置。

通过这种设计，只需根据需要加工的线材安装一个恰当的拉直单元，自旋体就随时可以开始工作，不会浪费材料和时间。Delisi设备也不会损坏线材。

线材进入自旋体后，通过一系列弯折对其进行拉直，不会损坏移动中的线材。在进行飞切操作时，剪切机会在切割的过程中运行。切割停止后，就会迅速退回起始位置，不会阻挡线材的移动。

在进行大量的短切时，比如焊条加工，Delisi可对设备提供一个连续的切割盘，以此提高切割速度，可轻松达到每分钟400条的最大产量。这种机器还可以提供一个电子编程器和不同类型的放线装置、杆材收集床和其他特殊设备。

Delisi Srl – 意大利

网址: [www.delisisrl.com](http://www.delisisrl.com)

## 提高八类以太网应用速度

通过先进的电路板技术，专利RJ-45插头可以将八类以太网的性能提高到2,000 MHz。

当今世界对高速通讯的需求不断提高，八类以太网光缆已经成为实现这一目标的重要产品，特别是在数据中心、语音、视频或其他在最长30米距离内使用铜电缆的高带宽应用。

为了确保八类以太网适配器能够高效地达到最高40 Gb/s的数据传输速度（当今很多用户速度的4倍），OCC (Optical Cable Corporation) 公司推出全新RJ-45插头，以集成电路板技术大大改善了串扰、毁损等问题，确保性能稳定，最高频率可达2,000 MHz。

如何将标准RJ-45连接器的数据传输速度提高4倍，这对于工程师们而言一直都是一个重大挑战，这也是本产品的开发原因。

OCC铜材连接部门的经理、TIA工程分会TR-42.7的会员Derrick Stikeleather说：“从本质上而言，新插头所采用的技术可为插头的性能提供更先进的控制。

对于传统类别的插头而言，插头电线必须固定位置，导致性能不稳定。但是如果使用电路板，就会从根本上消除插线不稳定的可能性。这还意味可用更可控的方式，实现电缆到终端的电气性能传输。”

Stikeleather先生补充道，与标准连接器中所使用的电路板材质相比，新专利技术中的电路板材料性能更好。他解释道：“如果没有这种材质，就不可能实现40Gb/s的高品质数据传输速度。新插头采用了独特的电路板设计，结构中所使用的材质也非常先进，并因此在最近获得了一项专利。它是直连高速链路和数据中心服务器连接的理想选择。”

他还表示，这种插头提供了稳定而值得信赖的传输性能。与八类线缆共同使用，可以满足甚至是超过最近获批的第八类标准。全新RJ-45插头模块的兼容性也很强，可与大部分以太网连接端口目前使用的RJ-45基础设施兼容，包括Cat 6A、Cat 6和Cat 5e线缆。它可以就地安装，多数线缆安装人员都会熟悉其安装程序。

此外，全新RJ-45插头还能与OCC产品中的RJ-45固化连接器、不同类型的插座、插头和底壳兼容，确保用户可以在严苛的工业和军用操作环境下，拓展其以太网平台的使用范围。

Optical Cable Corporation – 美国  
网址: [www.occfiber.com](http://www.occfiber.com)

## Hannay推出 AVC1500系列新产品



○ 全新AVC1500系列便携式储线盘

AVC1500系列便携式储线盘是Hannay Reels推出的全新产品，钢和铝材结构结实耐用，黑色哑光饰面，不会出现反光现象。

该产品配有一个固定安装的标准直接手摇式起重机以及一个维可牢缆索加固件。手摇卷动模式下还设有一个弹簧启动的锁销和凸轮锁阻力轧闸。

可选重载锁定脚轮组、架承式手柄和分隔盘，可根据需要提供。

Hannay Reels – 美国  
网址: [www.hannay.com](http://www.hannay.com)

## 全新(MAGS)调节挤出头

Guill Tool 推出 500 系列十字挤出头，具有 MAGS 胶体厚度调整功能。500 系列设计的目标是为了满足弹性化合物的流动特性和独特的加工挑战。Guill 这一全新十字头设计的重要特征之一，就是它可以通过机械方式辅助胶体厚度(MAGS)调整系统。有了这种全新胶体厚度调整方法，操作员就可以使用普通的套筒扳钳在一个位置进行轻松操作。

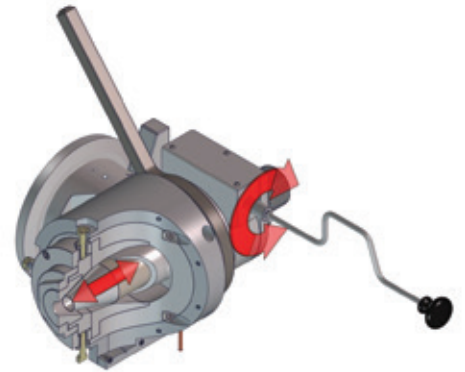
无需处理各种螺栓和螺母来调整胶体厚度，因此可加快调整速度。通过芯管上的目测指示器，操作员可以了解胶体厚度移动的距离，让调整更加准确并可重复操作。全新500系列采用无硬件专利偏心夹设计，不需要通过拧松和拧紧加固器进行拆卸和安装，节省大量时间。拧松加固器时，凸轮螺母只需拧动一半的距离，导向器即可从挤出头体上抽出，进一步节省操作时间。此外，由于导向板上没有底切，因此在抽出导向板时不会出现材料外挂的现象，可实现更快速、更简单的清洁和更换。500系列还配备了最先进的中心位置同心性调整系统，可以大幅减少对模具的压力，实现更简单、更精准的同心性调整，同时不会导致表面螺栓松脱。调整螺丝的嵌件可轻松简单地替换锁死或破损调整螺丝，进一步节省维修时间，缩短停工时间。

本全新橡胶/硅胶十字挤出头的另一个创新特点是铸铝液态给料冷却套管。如果出现设备阻塞，用户可以断开冷却套管，与传统的集成式冷却系统相比，这一设计同样节省了停工时间。

配有MAGS胶体厚度调节功能的500系列十字挤出头，是目前大多数NRM设备的插入式替换件。但它也可用于任何其它设计或流水线布置的挤出机。全新设计的液体流入通道，可以减少材料在挤出过程中的剪切操作和所产生的热量。该设计可以降低挤出头的压力，让材料能够更平衡均匀地流过挤出头。Guill生产的所有十字挤出头，均配备了一个用于安装和拆除的工具包和详细的操作说明书。

Guill Tool and Engineering – 美国

网址: [www.guill.com](http://www.guill.com)



○ Guill 500系列MAGS调节挤出头，专为弹性化合物的流动特质而设计

## Goodwin实现工业新标准

Goodwin Machinery与Cable & Wire Technical Services合作，根据行业标准Winget Syncro F-13设计并生产了一种全新的大拉机。这种创新型设备的制造已及时完工，在其制造预算内，目前在欧洲一家工厂中的运转“非常成功”。

该CWF-13有色金属大拉机可加工8毫米直径的铜材或9.5毫米直径的铝材，具备多种优越性能，比如占地面积小(4.6 x 1.55米)，最大生产速度可达30.6MPS或更高。

这一设计的生产和组装全部在英国完成，目前正在生产的零件由Goodwin Machinery and Cable&Wire的优选供货商进行供货，最终的组装和测试在Goodwin位于Bolton的工厂中进行。

测试工作在客户的监督下完成。客户表示该设备运转时非常安静。之所以能达到静音的效果，是因为所有零件均进行了表面硬化和研磨处理。此外，设备的设计还优化了斜齿轮的应用，无需后轴/交错轴或螺旋锥齿轮。

新设备可为铜材或铝材增加一个润滑系统，还可选择放线支架。主变速箱还有一个低噪音螺丝油泵，安装在设备背板处，可简化维护和过滤清洁等工序。设备还配备了一个300HP/恒转矩发动机和驱动器。该设备是现有大拉机的完美替换产品，工程师/电气师能够将其与所有现有的拉拔线设备进行同步。

如果客户需要完整的生产线，Goodwin还可以供应全新的退火设备和卷绕轴，配备所有接口电路和控制器。

Goodwin Machinery Ltd – 英国

网址: [www.goodwinmachinery.co.uk](http://www.goodwinmachinery.co.uk)



○ Goodwin全新机械设备

## 配有自测式可拆卸模块的 Sikora火花测试器

欧洲标准规定，必须对开放式测试和检测设备定期检查。对于火花测试设备而言，必须检查其供电高压、短路电流和功能的准确性（灵敏度）。

Sikora火花测试器Spark 6030中，包括一个三步骤自测和校准系统（可选），内有一个Sikora App，可对测试结果进行移动监控和分析。由于每一个探针都需要进行校准，因此测试模块必须能够对其进行正常控制。

为了更好地进行这一程序，Sikora又进一步开发出Spark 6030 HF模块。Spark 6030HF的设计更便于对所有测试功能的模块进行更换，通过在外壳上增加一个开口实现快速更换。

为了满足ISO 9001标准的要求，Sikora建议对火花检测器每年校准一次，只需更换检测模块即可。由于所有功能都直接安装在模块中，因此校准时需更换整个模块。正因为如此，客户无需将整个设备交给Sikora，也不必动用维修工程师。

对于之前版本的模块，需要进行灵敏度和短路电流测试。在进行灵敏度测试的过程



配有自测和校准可拆卸模块的Spark 6030 HF火花测试器

中，需要在20秒内进行20次放电。火花测试器必须能完全检测到这些放电。为进行短路电流检测，需要用户在操作过程中制造一个触点错误和珠链电极。为了确保用户的安全性，这些检测的结果不得超过某个规定值。校准模块可持续测量检测电压

的精准性。根据火花测试器的标准，精准性的误差不能超过 $\pm 5\%$ 。如果满足这一要求，即代表测试成功。

Sikora AG – 德国  
网址: [www.sikora.net](http://www.sikora.net)

## 意大利拉直和切割技术

Violi Srl公司是一家线材、管材、杆材和金属型材产品冷加工领域设备的领军企业，在过去的20多年中，公司一直在从事相关设备的设计和制造工作。经过多年的发展，公司以类型齐全的产品在国际主要市场中占据了重要地位，获得了无数客户的认可和信赖。



可用于缆线、管线和复杂型材的拉直和切割机

公司提供的多样化产品中，有一个专用于拉直工艺的设备，可用于圆形或复杂型材的钢制或其它金属质地管材或杆材。

该产品采用了技术领先型解决方案，配备高品质零部件，确保在质量和产量上均达到令人满意的结果。

**MRT:** 配有双曲滚轴的拉直机，用于钢和其它金属材质的管材或杆材

**RPD:** 用于钢或其他金属材质的正方形和长方形型材

**MRTV:** 配有飞切加工系统的拉直机，可对铝、铜、黄铜、钢、银和金材质线材进行自动拉直

**RFTS/RFTC:** 配有锯片和剪切机的拉直机，用于最大10毫米直径的圆形和复杂型材

**MRTSA:** 配有锯片的拉直机，用于最大直径25毫米的圆形或复杂型材

Violi Srl – 意大利

网址: [www.violimacchine.it](http://www.violimacchine.it)

## 经典型号的全新设计

意大利的Tecno Impianti Srl公司是一家著名的缆线拉拔设备设计和制造企业，产品应用于缆线行业的不同领域。公司新推出的一款产品，以之前大获成功的湿法拉拔设备型号TI-310为设计基础。所示的这款设备将用于生产CO<sub>2</sub>焊条，与水平放置的卷绕器结合使用，与镀铜槽和控制放卷的调节辊组成一个完整生产线。

Model TI-310拉拔机的入口处有11个湿法拉拔道次和1个干法拉拔道次，另有310毫米卷盘和符合主要尺寸要求的锥形抱轴。Tecno Impianti的拉丝机产品中还新增了其它几个系列的产品：包括TR系列多道次缆线拉直机、MV系列竖直单次拉丝机、MVC倒转单次拉丝机和用于CHQ缆线的MO系列水平轴单次拉丝机。

所有这些设备的设计和制造均由公司独立完成，配零部件全部选自最优秀的品牌，可提供定制服务，同时提供类型多样的型号和配置。

Tecno Impianti Srl – 意大利  
网址: [www.tecnoimpianti-italy.com](http://www.tecnoimpianti-italy.com)

# India Insight

## Visitor success at sixth Wire & Cable India

FOR the sixth time the Indian trade fair trio Wire & Cable India, Tube India and Metallurgy India was held at the Bombay Convention and Exhibition Centre in Mumbai in October 2016.

Over three days of the trade fair the latest technologies from the wire and cable industries, tube processing and tube trading as well as metallurgy were presented by 406 exhibitors on just under 8,000m<sup>2</sup> of exhibition area.

Alongside a high percentage of exhibitors from India, there were again large country pavilions from Germany, Austria, Italy, the USA and China.

The concurrent holding of the three trade fairs generated valuable synergies for both exhibitors and visitors alike. The atmosphere was governed by many conversations at trade fair stands and the prospect of good follow-up business.

Exhibitors rated the quality of visitors as positive throughout while high decision-making competence and good technical knowledge characterised the conversations at the stands.

More than 12,300 trade visitors headed to the centre in Mumbai, corresponding to a 28 per cent increase in visitors over previous events.



○ Visitors at 2016's Wire & Cable India exhibition in Mumbai, India

In parallel with this trade fair trio Messe Essen and Messe Düsseldorf India organised the India Essen Welding & Cutting.

The next Wire & Cable India, Tube India and Metallurgy India will again be held concurrently with India Essen Welding & Cutting at the Bombay Convention & Exhibition Centre in Mumbai from 27<sup>th</sup> to 29<sup>th</sup> November 2018.

**Wire & Cable India – India**  
Website: [www.wire-india.com](http://www.wire-india.com)

## Pump manufacturer takes new direction

The Coimbatore-based pump manufacturer CRI Group has announced its move into high-end specialised wire and cable.

In its first phase, the company has established a manufacturing plant with an integrated cable compound manufacturing facility, capable of processing over 10,000 tonnes of copper per year.

“In the second phase, the company has planned to invest further to double the capacity in about two to three years time,” said G Soundararajan, vice-chairman, CRI Group.

The company currently manufactures pumps, valves, pipes and castings.

CRI's wires and cables division will benefit from CRI Group's long-standing relationships with reputed EPC contractors, retailers, consultants and contractors.

The company has a distribution network in 120 countries, seven foreign subsidiaries and 32 branches in India. In addition to sales through its existing channels, CRI is establishing a new distribution network for some of its wire and cable products.

The company has developed a winding wire with higher dielectric strength and DC solar cables. Its wider cable range will include lead-free insulated cables, EPDM cables, special oil-resistant and chemical-resistant cables for waste water, communication cables, halogen-free flame-retardant cables, termite-resistant wires, flexible power cables for industrial applications, and submersible cables.

### CRI Group – India

Website: [www.crigroup.com](http://www.crigroup.com)

## Students stay on track

Student research and development group Team Ashwa Racing, from R V College of Engineering in Bangalore, is supported by Habia for its cables and wires.

The team takes part in Formula SAE events in India and around the globe, competing with some of the best universities in the world.

Formula SAE is a student competition organised by SAE International (initially the Society of Automotive Engineers). The competition began in 1978 and calls upon teams of students to design, build and test drive a formula racing car prototype.

Habia's country manager for India, Nagaraj S Aithal, said: “We are very happy to support [Team Ashwa Racing]. They are a dedicated and technically strong team who travel all over the world as great ambassadors for Habia when they participate in big events.”

In the recently held hybrid event in the US, Ashwa Racing took second position in both the design and the project

management sub-events, and stood fourth overall among all the teams in the world.

### Habia Cable – Sweden

Website: [www.habia.com](http://www.habia.com)

## Copper wire rod line

Ryker Base Private Ltd, a joint venture between Polycab Wires and Cables and Trafigura, India, has placed an order with SMS group for the supply of a Contirod® CR-3500 line.

The line, for the casting and rolling of wire rod in a single process, will have a production capacity of 35 tons of cast and rolled copper wire rod per hour.

Commissioning of the Contirod line, at Ryker's new plant in the Indian state of Gujarat, is scheduled for the first quarter of 2018. Ryker will use the Contirod line for ETP copper wire rod, the starting material for its own cable production. In-house production of 8mm drawing stock will enable Ryker to maintain a consistent supply for its existing wire drawing plant.

The scope of supply includes a shaft melting furnace, a twin-belt caster, a 12-stand rolling mill with separate individual drives, a deoxidisation and cooling section, a wire coiling station, a strapping unit and a film packing station.

### Ryker Base Private Ltd – India

## Rebar line

Concast (India) Ltd, a Primetals Technologies Group company, has received an order from the Indian steel producer Orissa Metaliks to supply a three-strand continuous billet caster for the company's production site near Kharagpur, West Bengal.

The plant is designed to produce 384,000 tons of carbon steel billets per year with a cross section of 100mm for further processing to commercial rebars.

The aim of the project is to increase capacity. To save energy, the casting machine is designed for hot direct rolling of billets to rebars without reheating.

Orissa Metaliks is involved in producing steel products and is part of the Rashmi Group. The caster has a machine radius of 6m, a metallurgical length of 11m and a curved tube mould. Maximum casting speed is 4.1m per minute.

### Concast (India) Ltd – India

Website: [www.concastindia.com](http://www.concastindia.com)

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## Samsung's troubles with the Galaxy Note 7 will probably deal Vietnam only a glancing blow

Samsung Electronics, which makes nearly a third of its smartphones in Vietnam, has estimated that the stop-work order on its fire-prone Galaxy Note 7 model will produce losses of more than \$1.78 billion in the last quarter of 2016, followed by half that in the first months of this year. The Southeast Asian country would seem positioned to take a significant hit as Samsung retrenches. But according to Ralph Jennings of *Forbes*, Vietnam – with GDP growth of more than six per cent a year on the back of exports – is expected to be hurt, but not very badly nor for very long.

Mr Jennings reported that Hanoi-based SSI Research foresees a decrease through March of only \$924 million, or 0.6 per cent, in overall exports from Vietnam due to the stoppage of Note 7s. Samsung has pledged \$12 billion in factory investment in Vietnam and the Korean electronics giant accounts for a fifth of Vietnam's smartphone shipments. But not all of these were Note 7s, and SSI Research said Samsung is expected to promote sales of "other flagship models." This means that any "negative impact will be likely balanced," SSI said. ("How Samsung-Reliant Vietnam Will Survive The Note 7 Stoppage," 19<sup>th</sup> October)

Because Samsung smartphones are only assembled, not designed, in Vietnam, analysts also see little risk to the country's good name from the overheating of Note 7s – apparently a design flaw. Adam McCarty, chief economist with Mekong Economics in Hanoi, told *Forbes* that, in his view, because Samsung is having trouble with one product "is not going to tarnish the reputation of Vietnam as a most attractive country for export-oriented FDI [foreign direct investment] manufacturing."

Since 2010, Vietnam has rivalled China as an export manufacturing hub anchored by cheap labour, friendly investment rules, and tariff-cutting trade pacts with major export markets.

## Nokia's chief of technology supplies a rationale for cable companies doubling as wireless service providers

Noting that cable companies previously have tried offering wireless, without success, Ben Munson of *FierceCable* wondered why cable telcos such as Comcast and Charter, both of the USA, would express intentions of becoming wireless service providers.

During Cable-Tec Expo 2016, held in Philadelphia in September, he put the question to event keynoter Marcus Weldon, CTO of the Finnish multinational communications and IT company Nokia.

These few excerpts from the interview suggest what might prompt a cable company to consider taking even tentative steps into the wireless ecosystem: ("Marcus Weldon Says Cable Could Win at Wireless This Time")

### Q: What do you see that's different this time?

A: What we're seeing is that wireless small cells and wireline nodes are moving to the same location in the network. Whether that node is telco or cable, and the cell is a Wi-Fi access point or a licensed spectrum cell, they're all moving to the same point, about 100 to 200 metres away from the end user. When that happens, those who own fibre going to that location, who own power at that location, naturally are the best ones to provide that set of services across different wireless and wired technologies.

### Q: So the move toward small cell architecture gives cable an advantage this time around?

A: Advantage in the sense of its architectural commonality. It doesn't mean that [cable companies] will be better than the telco segment but it means they are now legitimately deploying an architecture that can be turned into a wireless architecture, as opposed to trying to overbuild

themselves with a whole wireless macro layer. Now fibre nodes, cable, and small cells will become one in the same location, which means one field force, one backhaul, one powering.

### Q: With the wireless playing field now more level, what could hybrid (cable-wireless) access mean for network infrastructure investment as a whole?

A: It provides more options, because it means that telco and cable architecture are both compatible with future wireless. So now, whoever you are, you will have the option of working with a partner who can help you deploy highly distributed nodes and cells, whereas before you had no such option but to build it yourself.

## The Silicon Valley electronic commerce giant Amazon may be starting up in broadband in Europe

For another example of sidling into a separate but related area, according to *The Information* (19<sup>th</sup> October), Amazon.com is believed to be considering offering Internet service directly to European consumers. This would allow Seattle-based Amazon to bundle Internet access with its Prime streaming video offering, making it more competitive with cable operators which already offer a similar broadband-video package.

The tech news site noted that Amazon is already a strong competitor in streaming video, selling both its own Prime service and subscriptions to cable channels. Adding Internet service could help it gain more video customers and would make it the latest tech company to try its hand at providing broadband access, not just the services that run on top of it.

"Google has tried both with cellular and wired broadband networks," said Amir Efrati and Martin Peers of *The Information*. "So far without showing signs of much success."

Cara McGoogan of the *Telegraph* pointed out that a launch in Britain and Germany, rather than the USA, would hold attraction for Amazon because both countries have rules that make it easier for newcomers to offer broadband. In Britain, BT is compelled to offer rival companies



access to its Openreach network. This has allowed John Lewis Broadband, SSE, the Post Office and others to all offer broadband. Like them, wrote Ms McGoogan, Amazon has no plans to build its own network but could utilise the access to existing infrastructure.

## Elsewhere in telecom . . .

- The Dutch Senate on 12<sup>th</sup> October passed the revised Net Neutrality Law as part of an amendment to the country's Telecommunications Act. The strict new law seeks to ensure that telecoms and Internet service providers (ISPs) do not favour one Internet app or service over another. Opponents, however, assert that the legislation is overly severe and is out of line with the European Union's own open Internet standards.

Afke Schaart, vice president Europe at the GSMA, said: "We are greatly disappointed with the outcome of today's vote. We believe that the Dutch Net Neutrality Law goes far beyond the intent of the EU regulation. We therefore call on the European Commission to ensure the harmonised implementation of Europe's Open Internet rules." According to the London-based GSMA, which represents the interests of mobile operators worldwide, the tighter laws in the Netherlands will "hinder development of innovative services and consumer choice."

- Finland's Nokia and Chicago-based USA Cellular have collaborated to test 5G fixed wireless in North America and showcase ultra-high speed, next-generation networks in both indoor and outdoor environments. As reported by Nokia (12<sup>th</sup> October), the testing used 28GHz spectrum through an experimental licence from the US Federal Communications Commission (FCC) and Nokia's 5G-ready AirScale radio platform to stream six simultaneous 4K ultra-high-definition videos.

The two sets of tests were conducted at USA Cellular's technology centre in Schaumburg, Illinois. According to Nokia, in both environments the tests delivered speeds of 5Gbps and ultra-low latency under two milliseconds

(ms) over the 5G wireless link. The companies said they plan further network testing and collaboration towards the development of 5G standards; and, in Nokia's case, to demonstrate commitment to playing a leading role in the realisation of 5G in North America.

- "The Mobile Economy – Middle East and North Africa 2016," from the GSMA, reports that mobile broadband networks will account for 61 per cent of mobile connections by 2020, up from 41 per cent today, across the diverse Middle East and North Africa (MENA) region. The London-based organisation for mobile operators found that, as of mid-2016, there were 339 million unique mobile subscribers across the region's 25 markets – a total expected to rise to 385 million by 2020.

At the same point, the number of smartphone connections had more than doubled over the previous three years to reach 263 million, accounting for 42 per cent of total connections and forecast to reach 467 million by 2020. According to Mats Granryd, the GSMA director general, operator investment in mobile technology is playing a crucial role across the Middle East and North Africa, helping to connect the unconnected in emerging markets and introducing innovative services in more developed countries.

According to the GSMA report, published on 17<sup>th</sup> October, the mobile industry in 2015 contributed more than \$150 billion to the MENA regional economy, or four per cent of its GDP, forecast to increase to almost \$200 billion by 2020.

The industry supported the local economy with more than a million jobs in 2015, including employment in the ecosystem and indirect support from economic activity generated by the sector. The mobile industry also contributed \$15 billion to public funding in the form of general taxation.

- The Local Government Association has called on the British government to include a social tariff in its universal service obligation for broadband.

According to an LGA report published on 20<sup>th</sup> October, the subsidy would give low-income families a basic service of at least 10Mbps. The LGA did not make any suggestion as to price but commended to providers an existing affordable telephone-and-broadband service from BT, on offer to people who receive income support. Councillor Mark Hawthorne, chairman of the LGA's People and Places Board, said: "Many government services are going digital by default, and we need to be able to ensure that the most vulnerable and least well-off can afford to use them."

- According to research from Ericsson's ConsumerLab, viewing on mobile and portable screens is moving ever closer to parity with fixed-TV viewing. At MIPCOM, the TV-centred trade show held 17<sup>th</sup> to 20<sup>th</sup> October in Cannes, France, Ericsson's Anders Erlandsson, senior advisor, consumer insights, said that "[we are] clearly heading towards a 50:50 split."

The latest consumer-preference study from the Swedish telecom equipment maker indicates that the ratio between viewing on fixed screens and on mobile screens is close to 60:40 for 2016, compared to almost 70:30 in 2010. Of 100,000 people polled worldwide by Ericsson, one in three respondents aged 16-24 said that a portable screen is more important to their video consumption than a home TV.

- Together with the Chinese vendor Huawei, the Openreach infrastructure unit of British fixed-line provider BT announced on 19<sup>th</sup> October that it had tested the latest fibre-to-the-premises technology in an FTTP connection joining the University of Suffolk, Ipswich Exchange, and BT's R&D centre at Adastral Park.

Simultaneous conductance over a single fibre optic cable of 40Gbps 'NG-PON2', 10Gbps 'XGS-PON', and 2.5Gbps 'GPON' was reportedly demonstrated. Having used the service successfully over a two-week period, the university was expected to continue utilising the high bandwidth for streaming lectures and delivering online courses.



## 三星Galaxy Note 7丑闻对越南三星电子造成的伤害有限

三星近三分之一的智能手机都在越南生产，据估计，在2016年的最后一季度，因易燃的Galaxy Note 7而停工的订单，将造成超过17.8亿美金的损失，紧随其后的是今年前几个月，损失为最后一季度的一半。由于三星削减产量，这个东南亚国家将遭受严重冲击。但据越南《福布斯》的拉尔夫·詹宁斯报道，出口是越南每年超过百分之六GDP增长的支撑力。这一领域预计将受到重创，但不很严重时间也不会持续太长。詹宁斯先生报道，由于Note 7的停产，河内SSI调查估计在3月份的下降仅为9.24亿美金，或占越南总出口的0.6%。三星已承诺在越南工厂投资120亿美金，该韩国电子巨头占据了越南智能手机出货数量的五分之一。但这些不全是Note 7s，SSI调查称三星预计将推动“其它旗舰型”产品的销售。这意味着“任何负面影响将被平衡”，SSI评论道。（“Note 7停产，依赖三星的越南市场将如何生存，” 10月19日）

由于三星智能手机仅在越南组装，不在越南设计，分析家们认为对其国家荣誉也基本无影响，Note 7s过热现象显然是一种设计缺陷。河内湄公河经济大学的首席经济学家亚当·麦卡蒂告诉《福布斯》，在他看来，一种三星产品的丑闻不会有损越南的名声，因为越南是出口型制造及最具外国直接投资（FDI）吸引力的国家。2010年以来，因其廉价的劳动力、友好的投资制度及主重大出口市场关税削减贸易协定，越南一直与中国争夺出口制造中心的地位。

McGoogan女士写道，像它们一样，亚马逊没有计划建立其自己的网络，而是利用现有基础设施的接入。

### 其他地区电信动态……

▶ 荷兰参议院在10月12日通过了修订版网络中立法律，作为国家电信法案的修正案。该项新法律旨在严格确保电信及网络服务供应商（ISPs）不偏爱一种网络应用程序或服务。然而，反对者认为该立法太过严苛，与欧盟的开放网络标准不符。欧洲GSMA的副总裁Afke Schaart说：“我们对今天的投票结果相当失望。我们认为荷兰网络中立法案与欧盟法规背道而驰。因此，我们呼吁欧盟委员会确保欧洲开放网络规则的协调实施。”位于伦敦的GSMA代表了全球移动运营商的利益，该组织认为，更严格的法律在荷兰会“阻碍创新服务的发展及消费者的选择。”

▶ 芬兰的诺基亚和位于芝加哥的美国Cellular已就测试5G固定式无线、展现超高速及下一代室内和室外环境中的网络在北展展开合作。据诺基亚称（10月12日），测试使用28GHz频谱—从美国联邦通信委员会（FCC）授权的实验频谱，诺基亚5G AirScale广播平台可同时提供6个4K超高清视频。这两组试验在美国伊利诺斯州的绍姆堡Cellular技术中心进行。诺基亚的数据显示，在室内和室外环境中，该试验提供5Gbps的速度以及超低延迟2毫秒（ms）的5G无线连接。两家公司表示他们将继续进行5G标准的网络测试及合作；诺基亚则表示，将承诺在北美实现5G的过程中发挥主导作用。

▶ “移动经济—2016年中东及北非”，据GSMA报道，到2020年，移动宽带网络在中东及北非地区（MENA）各国的移动连接占有率将从现在的41%上升至61%。这家位于伦敦的移动运营商发现，截止2016年中，在该地区的25个市场有3.39亿个手机用户，到2020年总量预计将升至3.85亿。在同一地区，智能手机连接的数量超过了过去三年的两倍，达到2.63亿，占总连接的42%，并预计到2020年将达到4.67亿。GSMA的总经理Mats Granryd称，在移动技术中运营商投资在中东及北非起着关键作用，帮助连接新兴市场中的独立连接、并在多个更发达国家引进创新服务。根据10月17日发布的GSMA报告，在2015年移动产业为MENA地区经济贡献了超过1500亿美金，或其GDP的4%，预计在2020年将增至约2000亿美金。这一产业也是对本地经济的支持，在2015年提供了超过100万个工作岗位，包括生态系统的就业及由部门经济活动产生的间接支持。移动产业也以普通征税的形式，为公共资金贡献了150亿美金。

## 诺基亚的首席技术官阐述有线电视公司兼任无线服务供应商的基本原理

他指出，有线电视公司先前已经尝试提供无线服务，但没有成功，FierceCable公司的Ben Munson好奇为什么美国的有线电视公司能实现成为无线服务供应商的想法，例如Comcast及Charter。2016年9月在费城举行的有线电视技术博览会期间，他向主要发言人Marcus Weldon、诺基亚芬兰跨国通讯和信息技术公司的首席技术官提出这个问题。通过这次采访的摘录，我们可以了解一个有线电视公司考虑进军无线生态系统的初步措施：（“Marcus Weldon说这次有线可能超过无线”）

问：这次您发现什么不同了？

答：我们看到的是无线小信元和有线节点在网络中都将移动到同一位置。无论该节点是电信或有线，该信元是Wi-Fi接入点或授权频谱信元，它们都将移动到一个相同点，大约离终端用户100到200米远。这时，具有达到此位置的光纤、具有此位置权利的供应商，自然地成为在不同无线及有线技术中提供服务组的最好选择。

问：因此这次朝小信元架构移动给有线带来优势了吗？

答：在共通性意义上的优势。这并不意味着有线电视公司将比电信部门好，而是指他们现在合理地部署可转换成无线的架构，而不是试图建造过多的全无线宏观层。现在光纤节点、电缆及小信元在同一位置将变成一个，这意味着一个场力、一个回程、一个动力。

问：针对更多级别的无线竞技场，混合（有线—无线）接入对整体的网络基础设施投资意味着什么？

答：它提供了更多的选择，因为它意味着电信及有线电视架构与未来的无线都兼容。因此，现在无论你是谁，都可选择使用能帮助你部署高度分布式节点及信元的搭档，之前由于没有这样的选择，而需要自己部署。

## 硅谷电子商务巨头亚马逊可能在欧洲开始从事宽带业务

据Information杂志（10月19日）报道，Amazon.com表示考虑直接向欧洲客户消费者提供互联网服务，这也是向其他相关领域进军的范例。该公司的举措是：让位于西雅图的亚马逊与其Prime视频流捆绑互联网接入，使其比已提供类似宽带视频包的有线电视运营商更具竞争力。科技新闻网站指出Amazon在流媒体视频领域已经是一个强大的竞争对手，其既出售Prime服务也订阅有线电视频道。添加网络服务将帮其获得更多的视频客户，并将使其成为最新的科技公司，除现有服务外尝试提供宽带接入。Information杂志的Amir Efrati及Martin Peer说：“谷歌已经尝试了信元及有线宽带网络，迄今为止未取得显著成果。”

每日电讯报（Telegraph）的Cara McGoogan指出，在英国和德国推出而不是美国，将保持亚马逊的吸引力，因为这两个国家的制度便于新供应商提供宽带。在英国，英国电信（BT）被迫在其Openreach网络中提供竞争对手公司的接入。这使John Lewis宽带、SEE、邮政及其它供应商都提供宽带。



Issued to Mario Frigerio S.p.A.



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om **LESMO**

## Aluminium

### Awakening late to Chinese competition, Western aluminium makers learn that Zhongwang USA is to acquire Cleveland-based Aleris

In an article on the impact of Chinese aluminium on global markets, Stuart Burns of *MetalMiner* took note of a projection by Goldman Sachs analysts that the use of aluminium alloy in a car's main structure will rise by 17.5 per cent each year between 2015 and 2025. Perceiving a major source of growth for a decade to come, in a sector in which they had relatively little competition beyond the USA and Europe, Western firms like Aleris and Alcoa, both of the USA, increased their capacities and enhanced their product lines.

While Chinese aluminium mills – and to a lesser extent mills in Malaysia and Turkey – gradually increased their presence in commodity products, the Western mills moved upstream, investing heavily to meet demand for automotive sheet and castings and aerospace sheet, plate and extrusions. But now, Mr Burns wrote, “Chinese manufacturers are beginning to enter these markets, with a number of Chinese mills gaining Boeing and Airbus approval, underlining their intentions to take a slice of this lucrative market.” (“China: A Growing Presence in Automotive and Aerospace Aluminium,” 20<sup>th</sup> September)

The announcement on 29<sup>th</sup> August that the USA affiliate of one of China's largest aluminium makers would buy Aleris Corp (Cleveland) sounded an alarm. In addition to the cash price of \$1.1 billion, Zhongwang USA will assume \$1.2 billion in Aleris debt. Suddenly it became plain that Chinese firms, no longer content to export aluminium automotive and aerospace products from a cautiously expanding home base, were looking at taking over what Mr Burns termed “the crown jewels of Western aluminium producers.”

To judge from *Wall Street Journal* coverage of the \$1.1 billion deal – the biggest yet by a Chinese firm for an American metals producer – Aleris does seem a jewel.

The company has annual revenue of around \$3 billion, a 5,000-strong workforce, and 14 plants around the world. It makes rolled aluminium for the construction, automotive and aerospace industries, and has supplied aluminium plate to the USA military for use in armoured vehicles. It is building a \$400 million expansion in Lewisport, Kentucky, to ramp up production of aluminium sheet for car and truck makers. Thus parent company China Zhongwang stands to gain better access to USA auto makers, whose increased consumption of aluminium to meet fuel efficiency standards is, notes *MetalMiner's* Mr Burns “one of the brightest spots in the global aluminium industry.”

☎ China Zhongwang, based in eastern China, is among the world's biggest makers of aluminium extrusions. The deal by Zhongwang USA to buy Aleris offers a “complementary business foothold,” said Liu Zhongtian, who controls the USA affiliate and is also the founder and chairman of China Zhongwang Holdings Ltd. Aleris CEO Sean Stack told the *WSJ* that the transition to

new ownership would be seamless and that the “new strategic shareholder” would give the company “greater financial flexibility.” Analysts said the deal could provide the USA company with new sources of raw aluminium and a foothold in the fast-growing Chinese market.

☎ For its part, the Illinois-based Aluminum Extruders Council has said Zhongwang's takeover of Aleris “raises very serious concerns for the entire aluminium industry,” and is trying to mobilise support to block further Chinese penetration. To Mr Burns of *MetalMiner*, a multimedia resource for metal-buying organisations, signs are strong that the Western producers currently doing very well out of the sector fear “major disruption only just over the horizon.”

☎ The deal for Aleris, expected to close early this year, could attract attention from the federal inter-agency Committee on Foreign Investment in the USA, which could recommend blocking or modifying the acquisition on national security grounds.

## Steel

### Worldsteel, with input from 85 per cent of steel producers, sees the crisis in steel fading, demand growing

On 11<sup>th</sup> October, at its conference in Dubai, the World Steel Association (Worldsteel) declared its belief that the global steel sector crisis is easing, with demand for steel showing growth last year and again this year. In April 2016 it had forecast demand would fall 0.8 per cent for the year. But Brussels-based Worldsteel, with a membership of over 150 steel producers, now sees global steel demand for 2016 up 0.2 per cent to 1.501 billion metric tons (bmt), while for 2017 it expects demand to grow 0.5 per cent year-on-year to 1.51 bmt.

“Global steel demand is through the bottom of this cycle” is the Worldsteel view, on grounds of a brighter outlook for Russia and strong growth in emerging Asian economies excluding China. The question then arises how much benefit producers will realise from the envisioned pickup in demand, since it is unknown how much of the additional steel would be secured by Chinese buyers. To Alistair Ramsay, research director at *Metal Bulletin Research*, the Worldsteel forecast for higher output does suggest higher steel prices ahead. But, he told *Reuters*, “If China takes all of it, prices will remain under pressure.”

China produces and consumes about half the world's steel, and has an estimated overcapacity of 300 million metric tons (mmt). Confronting global criticism over cheap Chinese steel exports, Beijing pledged to cut steel capacity by 45mmt last year, and had met almost 50 per cent of its target by the end of July. Even so, China's crude steel output rose for a sixth straight month in August and at the time of the Worldsteel projection Chinese exports were on track to exceed the 2015 record of 112mmt.

Worldsteel had forecast that Chinese steel demand would fall four per cent in 2016. But the association said it now

expects demand in China to have fallen only one per cent to 665.6mmt for the year. It sees Chinese demand falling two per cent to 652.3mmt in 2017. Worldsteel, formerly the International Iron & Steel Institute (IISI), said the \$900 billion global steel industry remains vulnerable to geopolitical and economic uncertainties. In particular, T V Narendran, chairman of the Worldsteel economics committee, told *Reuters* in Dubai (11<sup>th</sup> October), “Downside risks come from the high corporate debt and real estate market situation in China.”

## An old but unexploited girdering system offers new advantages for construction of short-span steel bridges

A group of steel-bridge advocates has responded to a call from the USA Federal Highway Administration (FHWA) for a cost-effective accelerated bridge construction system for steel bridges 140 feet or less in length. The Short Span Steel Bridge Alliance (SSSBA), in conjunction with West Virginia University (WVA) and Marshall University, a research college, has produced a new type of tub girder that is said to require less fabrication and installation time.

As reported by Aileen Cho of the *Engineering News-Record* (Troy, Michigan), SSSBA organised a modular steel-bridge task group to explore possibilities, from twin-tub girders to orthotropic decks. The group, made up of more than 30 partners from the steel industry, academia, government organisations and bridge owners, developed the pressed-brake tub-girder (PBTG) system in three years.

The system is described as consisting of shallow, modular, galvanised trapezoidal boxes fabricated from cold-bent structural steel plates. The concrete deck is precast on the girder and the modular unit shipped by truck to the bridge site. (“Industry Group Introduces a Pressed-Brake Short-Span Steel-Girder System,” 12<sup>th</sup> October)

SSSBA fabricates its girders from standard steel plates, typically 72" or 96" wide, supplied by a mill. Greg Michaelson, an assistant professor at Marshall University (Huntington, West Virginia), said a plate is hit with a press brake four times – twice on the ends and twice in the centre – to achieve the U-shaped tub. With shear studs on the top flange and diaphragms, the concrete deck completes the composite unit.

The concept of a pressed-brake tub-girder system was not new but had not been fully developed, said Karl Barth, an engineering professor at WVU. “What we’re doing is taking all the advantages of a large, deep, welded tub girder and scaling [it] down to a short-span bridge system,” he told Ms Cho. “All the bracing, welding, and other details that go into a large tub girder simply couldn’t be economically deployed in short spans.”

☎ According to the SSSBA, cold-bending of the section – instead of cutting and welding – delivers as much as a 50 per cent reduction in fabrication costs, compared to proprietary cold-formed box-girder systems. There are economies, as well, in fewer stiffeners and cross frames, the group said. And the girders can be used for both tangent and skewed configurations.

Dr Barth noted that, while cold-bending steel fabricators often make crane booms and utility poles, they are not necessarily traditional bridge fabricators. Thus, he said, the PBTG system could create a new business line for operators of large press brakes.

## Elsewhere in steel . . .

☎ Steelmaking is returning to the southeast of England: specifically to the Sheerness plant in Kent which was closed down in 2012 but is to be restarted by the industrial group Liberty House. Having signed a long lease with Peel Ports, owner of the site, Liberty intends to have the rolling mills at Sheerness – with capacity of 750,000 metric tons a year – back in production by the summer.

As reported by Alan Tovey of the *Telegraph* (14<sup>th</sup> October), the Sheerness news came almost exactly a year after the company reopened a steel mill in Newport, South Wales; and two weeks after it restarted the Dalzell works – Britain’s largest steel plate mill – near Glasgow, acquired from Tata which had intended to phase out production there.

Liberty was understood to be planning to relocate the electric arc furnace from Sheerness to the Newport plant. V B Garg, CEO of Liberty Steel Newport, told the *Telegraph* that the decision to keep the rolling mills at Sheerness, rather than moving them elsewhere, was dictated by considerations of cost and the prospect of “[allowing] us to take advantage of emerging opportunities in the market.”

## Telecom

### New Los Angeles-to-Hong Kong subsea cable will allow users to choose from a variety of interoperable network equipment

Chris Preimesberger reported on *eweek.com* (12<sup>th</sup> October) that the “head-butting” USA online advertising rivals Google and Facebook, whose campuses are located only a few miles from each other on San Francisco Bay, are going into the fibre optic cable business together. The two web services giants are working together to lay a cable between Los Angeles and Hong Kong that will serve their users on both sides of the Pacific; and, eventually, perhaps transport data from public and/or private data networks.

According to Brian Quigley, Google’s director of networking infrastructure, the new Pacific Light Cable Network (PLCN) will have 7,954 miles of fibre and an estimated cable bandwidth of 120 terabits per second (Tbps). This speed is double that of the current highest-capacity trans-Pacific route FASTER – a Google-backed cable system which connects hubs on the USA West Coast with Japan and elsewhere in Asia. The other members of the FASTER consortium are China Mobile International and China Telecom Global (both Hong Kong-based), Global Transit (Malaysian), KDDI (Japanese), and SingTel, of Singapore.

Designed as a flexible cable system, PLCN reportedly will permit the two parties to select their optical equipment independently, allowing users to choose from a variety of network equipment that will be interoperable within the system. Before this, noted Facebook's Najam Ahmad, deployment of a new subsea cable was on a turnkey basis, with the system vendor providing the initial optical equipment on the basis of the technology available at the time the cable was contracted.

In comparison, he wrote in a blog post, the commercial/technical PLCN approach "allows for independence between the wet plant and the optical technology." ("Google, Facebook Partner on LA-to-Hong Kong Fiber Cable," 12<sup>th</sup> October). What this means, Mr Ahmad said, is that equipment can be refreshed as optical technology improves, even if advances are made while the system is under construction. When equipment can be continually upgraded, costs should go down and bandwidth rates should increase faster. According to Mr Ahmad, construction on the PLCN project was to have begun by the New Year, with commissioning scheduled for 2018.

## Elsewhere in telecom . . .

📞 Verizon apparently told its field technician crews in Pennsylvania that they could lose their jobs if they try to fix broken copper phone lines. As reported by Jon Brodtkin of *Ars Technica* (5<sup>th</sup> October), workers must instead try to replace copper lines with a connection to the Verizon Wireless cell phone network. A 20<sup>th</sup> September Verizon memo to workers warned, "Failure to follow this directive may result in disciplinary action up to and including dismissal." The memo was made public by the Communications Workers of America (CWA), which asked the Pennsylvania Public Utility Commission to put a stop to such copper-to-wireless conversions.

The union claims that the wireless home phone service VoiceLink is not a proper replacement for a copper phone line because it is inoperable with security alarms, medical devices such as pacemakers that require telephone monitoring, fax machines and other equipment. For its part, Verizon – whose use of VoiceLink to replace broken copper lines has been controversial for years – defended its position to *Ars Technica*. In response to Mr Brodtkin's question, a Verizon spokesperson outlined the circumstances in which the company will restore copper-based phone connections:

"If the serving wire from the pole to the house is cut or has a tree [interfering with it], we'll tell our technicians to address the situation. But in cases where the trouble proves to be in the copper cable requiring another truck roll (which will extend the out-of-service condition), it makes sense to restore service to the customer immediately. The tech can do this with VoiceLink. The goal here is to restore service as quickly as possible to the customer."

📞 Australian National University (ANU) has found that over two-thirds of respondents polled on "Attitudes to National Security: Balancing Safety and Privacy" support federal telecommunications data-retention laws intended to protect national security.

An ANU phone survey conducted in June and July 2016 found that 67 per cent of 1,200 randomly selected individuals believe the retention of communications metadata is "justified as part of the effort to combat terrorism and protect national security." In addition, almost 70 per cent of the respondents supported data retention for counterterrorism purposes.

Corinne Reichert of ZDNet (10<sup>th</sup> October) reported that legislation in effect since October 2015 stipulates storage for two years by telecom carriers of Australians' call records, location, IP addresses, billing information, and other data, to be made accessible without a warrant by law-enforcement agencies. In response to complaints from small operators about the burden of compliance, the government announced an AU\$128.4 million programme for covering the costs of mandatory data retention. Grants ranging from AU\$10,000 to AU\$39.9 million were distributed among 180 Internet service providers (ISPs).

## The American economy

### The latest jobs report bodes well for the current expansion in the USA – but the key to the future is in Mexican hands

USA employers added 156,000 jobs in September 2016, the Labor Department said, enough to accommodate new entrants to the labour force and attract workers who dropped out after the recession of 2008-2010. Average hourly earnings rose by 0.2 percentage points in the month, bringing the wage gain over the previous year to 2.6 per cent, well above the pace of inflation. The typical workweek also grew slightly.

A striking feature of the improved employment report – not apparent from the stark figures – is the important, indeed vital, contribution of Hispanic workers. As noted by Conor Sen of *Bloomberg News*, Since the low in December 2009, employment in the USA has increased by 13.6 million workers; and 43 per cent of that growth, or 5.9 million workers, derives from Hispanics – some born in the USA, others immigrants. In contrast to the white non-Hispanic Americans in a shrinking labour pool, more Hispanics are entering their prime working years, or are too young to retire. Excluding Hispanics, the labour force in the USA is virtually unchanged since 2008.

Further refining the picture, Mr Sen pointed out that Mexico is by far the largest country of origin for Hispanic immigrants to the USA. Net migration from Latin America since the recession has been minimal (more Mexicans leaving than arriving), so the strong Mexican component in the USA labour force may be thought of as a "demographic dividend" from Hispanic immigration in the 1980s, 1990s and 2000s. ("The Future of the US Economy Lies in Mexico," 26<sup>th</sup> September)

This is very germane to the labour challenges that the USA will confront over the next generation. The South and West must find workers to support the construction of needed housing and infrastructure, plus the service-sector

work generated by a growing economy. In the Northeast and Midwest, with their shrinking labour pools and ageing populations, the choice will lie between importing workers to fill the labour gap or exporting some work, as Ford Motor Co has done.

Ford in August announced that it will be moving all small car production from Michigan to Mexico, as low profit margins and scarce labour make it uneconomical to build the cars at home. Nine of the 11 new car factories in North America since 2011 are in Mexico.

☎ Why is Mexico providing such an important part of the USA economy's workforce – both inside the USA and south of the border? Mr Sen posed the question and answered it. Mexico is one of the few countries with the demographic and geographic profile to support the labour needs of a country as large and dynamic as the USA. It is tenth in the world in population and still has a growing prime-age workforce. It is right next door to the USA. There are already well-established cultural ties between Mexico and many parts of the USA. Trade deals are in place.

Mr Sen noted that, since World War II, when Mexican farm workers came to the USA to meet home-front demand, Mexico has always been the default remedy for any labour shortage in the USA. High-skilled immigrants from China and India are unlikely to fill openings in construction or food service. And, given the likely political resistance to mass immigration even from a long-time friend like Mexico, public support for an influx of workers from anywhere else is probably not an option.

☎ Wrote *Bloomberg's* Conor Sen, "When it comes to the US workforce and when it comes to US companies shifting jobs abroad, the future of the US economy will likely be *hecho en Mexico*."

## Rejecting conspicuous consumption, adults under 35 are seen as shaping the economy of the USA for decades to come

Reporting from Washington, Don Lee of the *Los Angeles Times* noted that millennials (those who reached adulthood around the year 2000) are the best educated and most diverse population of young people in USA history. They are also, he observed, perhaps the most coddled, some would say spoiled – "known for bouncing around jobs, delaying marriage, and holing up in their parents' basements."

But, wrote Mr Lee, millennials – as of 2016 the largest demographic group in the USA, some 75 million strong – are set to become "the most impactful generation since the baby boomers." Their influence may seem muted, due largely to the economic instability that has left many struggling to find good-paying jobs and saddled with staggering student loan debt. Despite this, Mr Lee asserts, adults under 35 are very consequential people.

Their coming of age in the midst of the worst financial crisis since the Great Depression has, he said, bred distinct traits that could pose special challenges for the nation's future growth and prosperity. For one, millennials are pinchpenny.

Notably, the low home-buying rate of young adults is a big factor in the slow USA housing market. The home-ownership rate for those under 35 slipped to a low of 34 per cent last year, compared with around 40 per cent for that cohort in the prior three decades. And people today are postponing marriage and parenthood, which will weigh on home sales in the future.

Another key difference from their predecessors, particularly Generation X (those born from the early 1960s to the mid-1970s), is that millennials tend to be risk-averse, especially when it comes to starting businesses. According to the latest report from the Kauffman Foundation (Kansas City, Missouri), which fosters entrepreneurship education, the rate of start-ups in the USA is higher today than it was ten or 20 years ago for every major age group – except that of 20- to 34-year-olds. ("Millennials Aren't Big Spenders or Risk-Takers, and That's Going to Reshape the Economy," 10<sup>th</sup> October)

## The new entrepreneurs are older

"The result," said Mr Lee on *latimes.com*, "is that the composition of new business formation, already turning greyer with the ageing of baby boomers, has shifted even more sharply to older adults in recent years." Two decades ago, a little more than 34 per cent of all new entrepreneurs in the USA were younger than 34 years of age. Today these constitute just 25 per cent.

"This could be really troubling," Arnobio Morelix, a senior research analyst at Kauffman, told Mr Lee, who pointed out that start-ups indicate dynamism in an economy. New and young businesses have long created the bulk of new jobs in America; they are likewise critical for productivity growth.

Compared to baby boomers (born between the years 1946 and 1964), millennials are more disposed toward holding the same job throughout their working lives, the *Times* was told by Jean Twenge, a San Diego State University psychologist. Dr Twenge is the author of *Generation Me*, about the boomers.

☎ As for their redeeming features, Mr Lee observed that millennials might be called "the we generation." Surveys have found that, while not much interested in traditional politics, millennials care deeply about their communities and do more volunteer work than earlier generations of young people.

And young Americans today are unusually optimistic, which could propel purchasing – and economic growth – as their disposable income increases. But, as noted by Don Lee, "[They] tend to prefer experiences over buying things and accumulating stuff. To them, an impressive selfie capturing a memorable moment is, in some sense, as enviable as a new car or fancy watch was to their parents."

☎ He hardly needed to suggest, although he did, that this mind-set might be worrying for a USA economy heavily dependent on consumer spending, which accounts for two-thirds of the nation's gross domestic product.

**Dorothy Fabian – Features Editor**

## 铝

### 获知忠旺美国将收购克利夫兰的爱励铝业，西方铝业方对来自中国的竞争力量后知后觉

在一篇关于中国铝业对全球市场的影响的文章中，MetalMiner的Stuart Burns提到了一名高盛投资公司分析师的预测：汽车主体结构的铝合金使用量在2015年至2025年之间将每年增加17.5%。

美国爱励铝业和美国铝业公司等西方铝业公司意识到，这一领域将成为未来十年增长的主要来源，而且在美国和欧洲之外的市场中，这些公司所能遇到的竞争相对较小。为此，他们纷纷增加产能并强化了产品线。

随着中国的铝业工厂在商品市场中的地位不断加强（马来西亚及土耳其的铝业工厂在这方面的力度相对较弱），西方工厂开始转向上游领域，通过大举投资以满足对汽车板材及铸件、航空钣金、板材及型材的需求。但是现在，伯恩斯写道，“中国制造商已开始进入这些市场，许多中国工厂获得了波音及空客的批准，突显了它们想在这个利润丰厚的市场分一杯羹的意图。”（“中国：在汽车和航空铝领域的地位走高，” 9月20日）

8月29日的一份声明显示，中国最大铝制造商之一的美国分公司将收购爱励铝业公司（克利夫兰），这一消息对西方铝业公司而言是一个警告。除了支付11亿美金的现金价格，忠旺美国还将承担爱励公司12亿美金的债务。

中国公司的意图忽然变得如此显而易见：他们不再满足于从国内出口铝汽车配件及航空产品，以谨慎的态度进行扩张发展，而是着力于夺取伯恩斯先生所谓之“西方铝制造商的皇冠明珠”。

这项收购案价值11亿美金，也是中国企业迄今为止对美国金属制造商的最大规模收购交易。通过《华尔街日报》对其进行的报道可以看出，爱励似乎真的是一个宝贝。该公司的年营业收入约30亿美金，5,000多名员工，在全世界拥有14个工厂，主要为建筑、汽车及航空业制造铝材，并为美国军事装甲车辆提供铝板。

为巩固其在汽车及卡车铝板制造领域中的地位，该公司投资4亿美金在肯塔基州路易斯波特修建工厂，目前正在施工过程中。目前，美国汽车制造商为满足燃油效率方面的标准，在铝材方面的消耗越来越高，也被MetalMiner的伯纳斯先生称为“全球铝业最亮点”。通过这次收购，母公司中国忠旺也获得了接近美国汽车制造商的更佳途径。

中国忠旺公司位于中国东部，是世界上最大的铝型材制造商。忠旺美国分公司负责人、中国忠旺控股有限公司创始人兼董事长刘忠田表示：忠旺美国收购爱励的交易为公司提供了“互补业务的立脚点”。

爱励铝业首席执行官Sean Stack向WSJ透露，将以无缝的形式向新东家进行过渡，“新的战略股东”将为公司带来“更大的财务弹性。”分析称，该交易将为美国公司提供新的铝材来源，并让其在快速增长的中国市场上站稳脚跟。

但西方铝业内部的反应则是：伊利诺斯州的铝型材协会已表示，忠旺收购爱励的交易“让整个铝行业非常担忧”，并试图动员行业内的支持，阻止中国的进一步渗透。MetalMiner是金属采购企业的多媒体资源平台。该公司的伯恩斯先生认为，有强烈的信号显示，对于目前在该领域之外行业表现较好的西方制造商而言，他们已经开始担心“强大的破坏力...已初见端倪”。

爱励铝业的交易预计在今年年初完成。该交易可能会引起美国外国投资联邦机构间委员会的注意，并以国家安全为由建议中止或修改此收购。

## 钢铁

### 拥有全球85%钢铁制造商会员的世界钢铁协会认为，钢铁危机正在消退，需求正在增长

世界钢铁协会（Worldsteel）总部位于布鲁塞尔，拥有150多家钢铁制造企业会员。该组织在10月11日的迪拜会议中宣布，全球钢铁行业危机正在消退，去年的钢铁需求已实现增长，今年将再次增长。2016年4月，该协会曾预测今年的需求将下降0.8%，但现在却预计全球钢铁需求在2016年将增长0.2%，达到15.01亿吨（bmt）。在2017年，钢铁的需求预计将同比增长0.5%，达到15.10亿吨（bmt）。鉴于俄罗斯的未来发展较为乐观，亚洲新兴经济体出现强劲增长（不包括中国），该协会认为“全球的钢铁需求已探底”。由于中国买家还将购买多少钢铁，目前还是个未知数。那么问题来了，制造商将从预计的需求增长中获利多少？金属通报研究所的调研总监Alistair Ramsay认为，世界钢铁协会对更高产量的预测暗示未来的钢价将更高。但是，他向路透社透露，“如果中国买家全部购买，价格仍将面临压力。”

中国制造并消耗了世界钢铁的一半，并估计有3亿公吨（mmt）的产能过剩。廉价的钢铁出口遭到全球的抨击。中国政府去年承诺削减钢铁产能45mmt，在7月底已大约实现其目标的一半。即便如此，8月份中国的粗钢产量仍连续六个月上涨，世界钢铁协会预测中国的出口有望超过2015年112mmt的纪录。世界钢铁协会曾预测，中国的钢铁需求将在2016年下降4%。但该协会又表示，目前预计今年中国的钢铁需求仅下降1%，至665.6mmt。预计中国钢铁需求将在2017年下降2%，至652.3mmt。

世界钢铁协会（前国际钢铁协会）认为，全球钢铁产业价值9000亿美金，但容易受到地缘政治及经济不确定性的影响。特别要注意的是，世界钢铁经济委员会主席T V Narendran在迪拜向路透社透露（10月11日），“高额的企业债务及中国的房地产市场行情带来了下行风险。”

### 一个未被利用的老旧主梁系统，为短钢桥的建设提供了新的优势

美国联邦公路管理局（FHWA）号召在修建长度为140英尺或更短的钢桥时，采用一种具有性价比的快速桥梁施工方法。一些钢桥领域的学者对之做出了响应。短钢桥联盟（SSSBA）携手西弗吉尼亚大学（WVA）以及马歇尔大学的一个研究院，共同开发了一种新型槽型钢梁，据说可以缩短制造和安装时间。

《工程新闻纪录》的Aileen Cho报道（密西根州特诺伊），SSSBA组织了一个模块化钢桥任务小组，来探索各种建造方式的可能性，包括双槽大梁和正交各向异性桥。该任务组由钢铁行业、学术界、政府组织及桥梁所有方的30多名成员组成，他们在三年内开发出了折弯槽型大梁（PBTG）系统。据描述，该系统由模块化镀锌梯形浅箱构成，制作材料为冷弯结构钢板。混凝土桥面预浇制在大梁上，模块化单元由卡车运往桥梁地点。（“工业集团引进了一种折弯短钢梁系统”，10月12日）

SSSBA用标准钢板制成大梁，通常为72英寸或96英寸宽，由制造厂提供。马歇尔大学（西弗吉尼亚州惠灵顿）的助理教授Greg Michaelson说，对一块钢板进行四次弯折—两次在端部，两次在中心—从而构成U型槽。通过上凸缘及横隔板上的锚栓，混凝土桥面完成了桥体的组合。

WVU的工程学教授Karl Barth标识，折弯槽型大梁系统并非新概念，但从未被加以利用。他向Cho女士透露，“我们要做的是全面利用大型、深型焊接槽型钢梁的所有优势，并将其运用到短钢桥系统中，”“所有大槽型钢梁的支撑、焊接及其它细节根本不能经济地在短距离中部署。”

与专用冷成型箱梁系统相比，SSSBA的冷弯部分一而不是切割及焊接—减少了高达50%的制造成本。该任务组透露，在少数钢筋及十字框方面也带来了经济效益。该钢梁既可用于正切结构，也可用于倾斜结构。Barth博士指出，冷弯钢铁制造商通常也生产起重机吊架及电线杆，他们不一定是传统的桥梁制造商。他表示，正因为如此，PBTG系统还可为大型折弯运营商创造新的业务范围。

## 电信

### 洛杉矶-香港全新海底电缆，让用户可以选择多样化的协作型网络设备

Chris Preimesberger 在 eWeek.com 中报道(10月12日)：谷歌和脸书是美国竞争最激烈的两大在线广告商，其在旧金山湾的总部距离仅几英里。日前，这两家公司宣布携手涉足光纤有限电视业务。这两大网络服务巨头将携手在洛杉矶和香港之间铺设电缆，该电缆将服务太平洋两岸的用户，最终可能会从公共和/或私人数据网络传输数据。据谷歌的网络基础设施主管 Brian Quigley 透露，新的太平洋光缆网络(PLCN)光纤长7,954英里，预计电缆带宽120兆兆位每秒(Tbps)。与目前跨太平洋线路中容量最大的电缆FASTER(谷歌铺设的电缆系统)相比，这一速度是其两倍，将美国西海岸的中心与日本及亚洲其它地区连接。FASTER联盟的其它成员包括中国移动国际、中国电信国际(包括香港)、Global Transit(马来西亚)、KDDI(日本)及新加坡的SingTel。据报道，作为软电缆系统，PLCN将允许双方独立地选择光学设备，提供了在系统中具有互通性的不同网络设备，共用户选择。在此之前，脸书的Najam Ahmad指出，基于电缆定制的技术，部署新的海底电缆是在全盘设计并由系统供应商提供最初光学设备的基础上进行。相比之下，他在一篇博客中写道，商业/技术PLCN方法“实现了湿法工厂与光电技术的独立。”(“洛杉矶到香港的光缆合作方—谷歌和脸书，”10月12日)。Ahmad先生说，这意味着随着光学技术的进步，设备会不断更新，即使是在系统建设的过程中，仍然可以实现更新。当设备不断地升级时，成本将下降，带宽速度将变得更快。据Ahmad先生称，PLCN工程的建设在新年时已开始，试运行定于2018年。

## 美国经济

### 美国经济开始走暖，最新的就业报告也体现出了这一趋势。但未来的关键却掌握在墨西哥人的手中

美国劳工部说，2016年9月美国的就业岗位增加了156,000个，足以容纳劳动力市场的新成员和2008-2010经济萧条期间的失业人员。月平均时薪上涨了0.2%，工资比去年增加了2.6%，远高于通货膨胀的步伐。常规工作时间也略有增长。但在这份喜人的就业报告中，还有一个仅凭数据很难察觉的重要特征：西班牙裔工人做出了重要、甚至是不可或缺贡献。彭博新闻社的Conor Sen指出，2009年12月萧条期以来，美国的就业增加了1360万人。其中，43%的增长(590万人)来自西班牙裔，部分为美国出生西班牙裔，部分为移民。与劳动力人数不断萎缩的非西班牙裔美国白人相比，越来越多的西班牙裔美国人正进入黄金工作年龄，或远未达到退休年龄。如果不把西班牙裔劳动力考虑在内，美国的劳动力状况自2008年以来几乎没有改变。Sen先生指出，墨西哥迄今为止仍是美国的西班牙裔移民的最大输出国，这也是对目前发展趋势的一个证明。自经济大萧条以来，拉丁美洲到美国的净移民最少(离开的人数大于进入的人数)，因而墨西哥裔劳动力在美国市场中占主力的现象，可以解释为80年代、90年代及00年代西班牙裔移民的“人口红利”。这与美国下一代将面临的劳动力挑战密切相关。在南部及西部地区，住宅和基础设施行

业的建设需要更多工人，经济的不断发展也需要更多服务行业从业者。在东北部及中西部，劳动力数量萎缩及人口老龄化，使得企业面临着一个选择：依赖外来劳动力来填补劳动力空缺，或将部分工作输出到国外，正如福特汽车公司所做的那样。福特今年8月份宣布，由于低利润以及劳动力稀缺，在国内生产小型汽车没有经济效益，将把所有的小型汽车生产从密歇根转移到墨西哥。2011年以来，北美11个新汽车工厂中有9个都在墨西哥。

彭博社的Conor Sen写道：“在美国劳动力以及谈到美国公司将工作转移到国外，美国经济的未来事实上可能在墨西哥。”

### 拒绝炫耀性消费，35岁以下成年人将塑造美国未来几十年经济

《洛杉矶时报》的李东从华盛顿发来的报道指出，千禧一代(那些在2000年左右成年的人)是美国历史上受教育最高、最多样化的年轻一代。他观察到，他们也可能是最娇生惯养的一代，有的人会说他们是被宠坏的一代—“频繁换工作、推迟婚姻、躲在父母的保护伞下...都是他们的“罪行”。”但是李先生写道，千禧一代作为2016年人口统计中美国最大的人口群体(约7500万人)，将成为生育高峰期以来最有影响力的一代。由于经济不稳定，他们难以找到高收入的工作，加之学生贷款令其背上债务负累，他们的影响力看似平淡。尽管如此，李先生断言，35岁以下的成年人是非常重要的群体。他说，他们在大萧条以来最严重的金融危机中长大，从而具有独特的时代特征，能为国家未来的增长及繁荣带来特殊的挑战。举例来说，千禧一代其实非常吝啬。要知道，年轻人购房率低是美国住房市场萧条的重要因素。去年，35岁以下人群的住房拥有率滑至34%，之前三十年约为40%。如今人们推迟结婚和生育，这将影响未来的房屋销售。与他们父辈、尤其是X一代(在60年代早期与70年代中期出生的一代)相比另一个重要区别是：千禧一代有规避风险的医院，特别是在创业过程中。提供创业培训的考夫曼基金会(密苏里州堪萨斯市)最新报道显示，现今每一个年龄群在美国的创业率比10年前或20年前都高—除了20到34岁的人群。(“千禧一代不是大买家或冒险家，他们将重塑经济”，10月10日)

### 新企业家的年龄变大

李先生在latimes.com上说，“结果就是，随着生育高峰一代进入老龄化，新企业结构的成员年龄都偏大。近年来，老年人的比例大幅正价。”20年前，在美国，略多于34%的新企业家都在34岁以下。现今这个比例为25%。考夫曼基金会的一位高级研究分析师向李先生透露：“这真的令人感到不安”。他指出，新创企业是经济活力的体现。新创及年轻的企业为美国创造了大量新的就业机会；他们同样是生产率增长的关键。圣地亚哥州立大学心理学家Jean Twenge向《泰晤士报》透露，与生育高峰一代(出生于1946年至1964年之间)相比，千禧一代更倾向于在工作生涯中坚持从事相同工作。Twenge博士是讲述生育高峰一代的书籍《唯我世代》的作者。

至于他们的可取之处，李先生注意到，可将千禧一代成为“我们的一代”。调查发现，虽然对传统政治不感兴趣，千禧一代更关心他们所在的社区。与前一代年轻人相比，他们做的志愿者工作更多。此外，现今的美国年轻人超常地乐观，随着可支配收入的增加，这可能推动采购力—及经济增长。但是，李先生指出，“比起购买和囤积东西，他们更需要经验。对他们来说，从某种意义上而言，在某个难忘时刻拍一张令人印象深刻的自拍，其令人羡慕的程度与他们的父母获得一辆新车或一款花哨手表相同。”

他认为，对于严重依赖消费的美国经济而言(消费支出占国内生产总值三分之二)，这样的心态可能令人担忧。这一担忧其实并不多余。

Dorothy Fabian—特刊编辑



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# Manufacturing of compact conductors, highlighting the benefits and potential cost reductions in the whole stranding process

By Sean Harrington, Ceeco Bartell Machine Systems LLC

## Introduction

Ultimately, every cable manufacturer aims to make a quality product using the least amount of resources in the fastest time. To do this, they must understand the critical parameters that affect the strand they wish to make.

Once this is accomplished, finding the hardware to provide them with the most flexible and effective process is relatively easy.

The aim of this paper is to present a technological solution in the process of the manufacture of compact conductors, which brings cost savings from the wire drawing process through the cabling and into the extrusion process.

This is the use of the roll form technology, which allows the use of a single input diameter wire to be utilised throughout the stranding process, giving significant process savings and advantages.

Traditionally, a finished stranded conductor requires its own drawn wire diameter. Each wire diameter typically requires a new string up in the wire drawing machine. Some conductor designs require more than one drawn wire size.

Similarly, multiple set-ups in the stranding process are necessary for each size of conductor. The set-up time taken on both the drawing and stranding machines, combined with inventory levels that are necessary to manage the number of wire diameters, represent unnecessary activities that add to the conversion cost from rod to strand.

The SIW mentality effectively eliminates much of this unnecessary activity associated with the traditional set-up by using the same drawn wire diameter to finish a range of stranded conductors.

The result is:

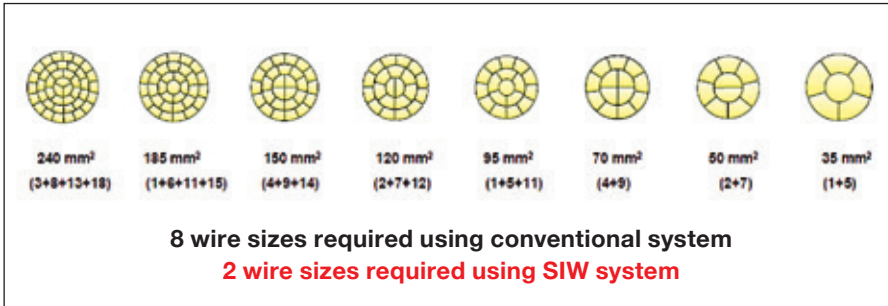
- Increased wire drawing output
- Reduced wire drawing die inventory
- Reduced scrap
- Significantly lower work in process
- Minimum strander payoff changes
- Increased strander output
- Shorter lead times
- Enhanced JIT manufacturing mentality
- Streamlined overall stranding process

Probably more to the point is a significant reduction in the variables that the manufacturer needs to manipulate in the manufacture of any strand programme.

The change in philosophy that is required to effectively use single drawn wire diameter to produce the required range of finished strand conductors is to replace the flexibility of stranding the same number of wires using different diameters with stranding different numbers of wires using the same wire diameter.

In general, the benefits of the SIW mentality are independent of the strand manufacturing process used.

It is only when the specific strand designs have been defined and the production requirements of those designs are determined that the choice of the optimum manufacturing cell can be considered.



○ Figure 1

It should be noted that the concept of using a single input wire to manufacture a range of finished conductor sizes is not new; it is used within the confines of most manufacturing plants within the allowances of the current specifications.

It has been used extensively in Europe where strand programmes using the single input wire diameter to cover a range of finished conductor sizes has been in existence for decades.

The potential cost reductions using this process can be split into the following areas:

- Process savings
- Material savings

## Process Savings

The obvious impact of the incorporation of roll forming into the stranding process is shown in *Figure 1*.

While still working within the constraints of the IEC and ASTM standards, the roll forming process allows the number of wires required to produce a range of conductors to be reduced dramatically.

In this case, to cover 35mm<sup>2</sup> to 240mm<sup>2</sup> the number of wires has been reduced from eight to two.

In a similar way, 35mm<sup>2</sup> to 500mm<sup>2</sup> the number of wires can be reduced from 12 to three. This reduction in the required number of wire sizes brings about major cost savings in the wire drawing area:

- Creates a higher productivity in the wire drawing machine due to the elimination of multiple set-ups for the different wire diameters required for the traditional strand designs
- Reduces the amount drawn wire scrap through wire size changeover
- Creates a reduction in the wire drawing die inventory

Similarly the roll forming process has a cost saving impact in the stranding process:

- Lower volume of different wire sizes being produced to await the stranding process
- Ability to use larger package sizes and switch from a bobbin system to a stem pack system
- A reduction in down time due to loading, with the ability of automatic pay-off changeover while the machine is running
- Quicker set-ups for different strand sizes due to the elimination of the movement of different pay-off sizes
- Higher linear production speeds, when compared to conventional stranding methods
- Reduction in manning levels in the stranding process

## Material Savings

The challenge for today's manufacturers is to determine what target is to be chosen within the scope of the specifications. If the criteria for determining the construction were based solely on the economics, the industry would gravitate to the unilay conductor schedule, and the smallest diameter that is allowed within that schedule.

The roll form process allows unilay products produced up to 500mm<sup>2</sup>. Statistical analysis of strands compacted with methods (die or rollers) other than the roll form system has shown that a typical material variance of ±1% to ±1.5% must be expected.

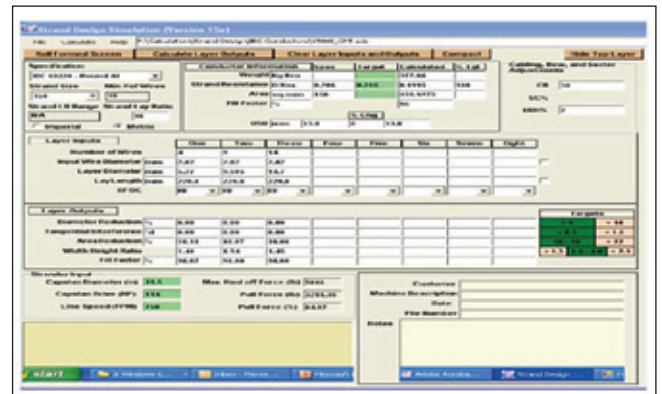
These results, therefore, lead to the need to oversize the conductors by at least three per cent in order to ensure that product does not fall below specification. This excess material is, effectively, given to customers free of charge.

When utilising the Ceeco Bartell roll form system with its strand design software, the material variance is reduced dramatically.

Giving a real and very tangible material saving over conventional compacting methods, this is particularly important with the current cost of aluminium and copper.

This means that the minimum diameters specified in the IEC and ASTM standards can be achieved, while at the same time approaching but not exceeding the maximum resistance.

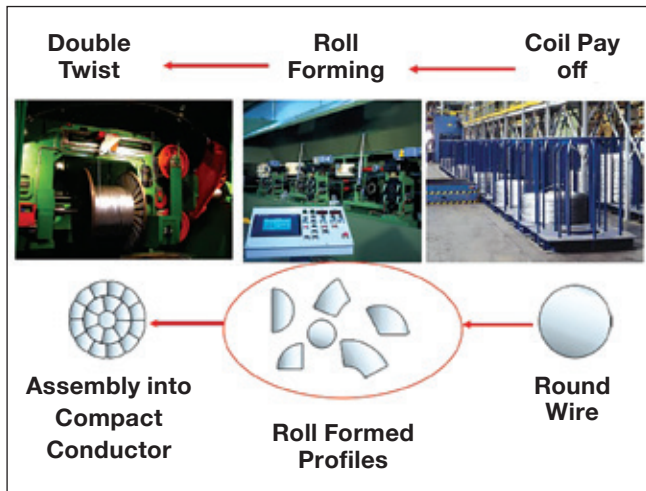
○ Figure 2: Strand simulator output 150mm<sup>2</sup> compact strand



○ Figure 3



Economic analysis of 95mm <sup>2</sup> XLPE product			
Fill factor	86%	92%	96%
Configuration	1=6=13	1=6=11	2=6=9
Outer diameter (mm)	11.7	11.39	11.07
Outer gap area (mm <sup>2</sup> )	15.88	0.710	0.663
Insulation cost (US\$/km)	131.35	109.55	106.83



○ Figure 4

Due to the wide variety of strand that is used in the industry, Ceeco Bartell has developed a mathematical model to assist with the strand design.

This model uses theoretical and quantitative data that allows prediction of the resistance of the strand. This program further analyses the geometry of the strand to optimise the performance of the machine. The result is an accurate prediction of the finished strand resistance.

Figure 2 shows a cross section of a 150mm<sup>2</sup> strand, showing how this program assists in the development of the optimum strand design.

This roll form programme provides the greatest potential as it has the smallest strand diameter schedule for a specific stand size. Consequently this also represents the greatest potential for insulation savings for a given insulation thickness.

This can be clearly seen in Figure 3, which shows savings in insulation while producing 95mm<sup>2</sup> XLPE product with fill factors ranging from 86 per cent to 96 per cent. As the conductor becomes smaller and the interstices disappear, the amount of insulation used will be reduced. 92 per cent fill factor is the best compaction that can be achieved using conventional methods. However, with the roll forming process 96 per cent fill factor can be achieved. This creates a potential saving of material of around two per cent.

The productivity of the extruder relies in part on the integrity of the strand construction. This applies equally to low, medium and high voltage extrusions.

Unstable strand construction not only compromises the speed of the stranding and extrusion processes, but can lead to considerable losses due to scrap and down times for both lines.

Birdcaging is often the result of unstable strand design. A tightly wound conductor is less likely to end up birdcaging. The tightness of the strand is greatly dependent on the geometry of the elements.

For this reason, the lay of the conductor is important. The elements of unilay/unidirectional lay conductors are nested and, therefore, inherently have a smaller outer diameter than reverse concentric lay and SZ conductors.

In addition, unilay/unidirectional lay conductors self-tighten under tension. As a consequence of this self-tightening feature, the extrusion of unilay/unidirectional lay conductors is statistically less prone to birdcaging.

The surface of the strand is also critical. A smooth outer layer such as one found with a roll formed layer presents a clean round profile to the extrusion process and, therefore, minimises the accumulation of conductor dust during the extrusion process.

The process is shown in Figure 4. Round wire is taken from large coil packs and passes through the roll form section where its shape is changed into various roll form profiles that are then assembled at high speeds by either a double twist machine or a single twist machine, depending on product size.

This high-speed continuous process allows for linear speeds of 200m/min to be achieved while producing highly compact conductors. The roll form strander is capable of producing 40 tons of 150mm<sup>2</sup> compact aluminium conductor in a 24-hour cycle.

## Conclusion

Savings in production costs depend on many factors such as existing manufacturing facilities; whether the strand is currently manufactured in-house or purchased; the care and control exercised over input copper and aluminium wire; general house-keeping; and the control of high-speed double twist stranding machines. Under the most advantageous conditions savings can provide quite astonishingly short pay-back periods, but should of course be calculated for each individual application.

The high performance of a roll form strander coupled with the Ceeco Bartell roll forming process will allow the cable manufacturer to reduce costs without compromising the finished conductor performance. An awareness of this and other new technologies, combined with enlightened specifications, will further enhance the development of strand design and the potential to optimise further the manufacture of stranded conductors.

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# 生产紧压导体，捻股过程中效益及潜在成本缩减

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## 简介

每个缆绳生产商归根到底都想用最少资源在最短时间内生产出高质量产品。为达到这一目的，他们必须清楚他们所想要捻股的一些关键参数。一旦能做到这一点，用最灵活有效流程生产出硬件产品相对则比较容易。

本文目的是展示一项生产紧压导体的一项技术方案，该方案可降低从拉丝、成缆到挤出工序的成本。由于使用辊压成型技术，允许在绞线过程中使用单一外径的进线，带来显著的成本缩减及其他优势。

传统绞合导线要求自身控制线材直径。每个线径都要求在绞线机中准备不同线材。有些线缆设计要求多种不同线缆尺寸。

无独有偶，生产不同尺寸导线要求有多样化绞股上盘。在拉丝机、绞股机上的上盘时间加上管理不同线径的不同库存水平，则无形中增加了从原材料到线缆成品的转化成本。

SIW方法有效避免传统操作的上盘，它通过采用相同线径完成一系列不同绞股导线的生产。其结果为：

- 增加线缆挤出产出
- 降低线缆挤出库存
- 降低废线率
- 极大减少工序操作量
- 最低捻股机成本
- 产量增加
- 生产时间缩短
- 即时生产能力提升(JIT)
- 优化绞股流程

也许更重要的是可以为生产商提供在生产过程中极大减少各种变量。

理念的转变在于有效利用单一线径以生产需要的不同尺寸线缆成品在于通过使用相同尺寸材料绞出不同线缆成品以取代使用不同尺寸原料绞出相同数量线材。

一般来说，SIW方法与不同绞股生产流程无关。只有确定了具体绞股设计及生产要求，才可考虑最优生产单元。

需要注意的是使用单一线径生产不同尺寸成品这一概念并不新颖；多数现有生产商均已采用这种方法。在欧洲采用单一线径生产不同尺寸成品已经盛行多年。

潜在成本缩减主要体现在以下方面：

- 流程成本缩减
- 材料成本缩减

## 流程成本缩减

使用辊压成型技术影响如图一所示。

按照IEC和ASTM标准操作，辊压成型流程可以使生产多种导线所用线材数量得到极大缩减。如从35mm<sup>2</sup>到240mm<sup>2</sup>的线材数量从8种减少到2种。相对应从35mm<sup>2</sup>到500mm<sup>2</sup>的线材数量可从12种减少到3种。

线材尺寸要求降低带来极大缩减了成本：

- 与传统捻股设计相比该技术通过避免针对多种线材尺寸的多盘上盘而极大提高拉丝机生产率
- 通过线材尺寸对调降低废线率
- 减少拉线模具清单

辊压成型也可降低捻股流程成本：

- 减少捻股过程中不同尺寸线材数量
- 可使用更大包装尺寸及由绕线系统转换为干装系统
- 减少因上料导致的停机时间，机器开机时有自动上线能力
- 因减少送料移动而有的针对不同捻股尺寸的快速上盘
- 与传统捻股方法相比更高的直线生产速度
- 捻股流程中降低人力需求

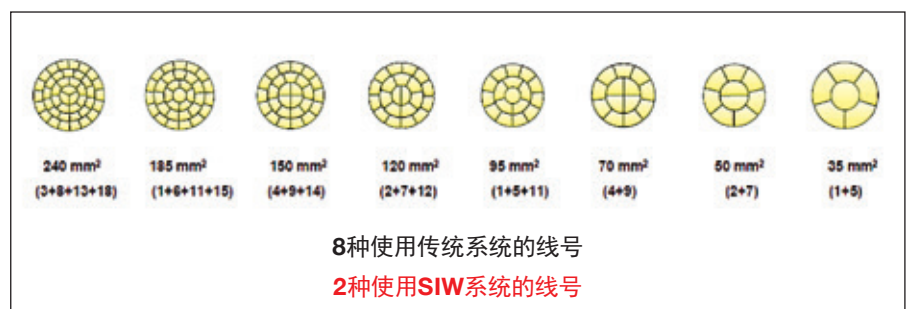
## 材料成本缩减

今日生产商面临的挑战在于在参数范围确定选择目标。如仅以经济为标准，行业将趋向紧压特圆导体生产计划和在该计划中最小尺寸产品的生产。辊压成型流程可生产高达500mm<sup>2</sup>的紧压特圆产品。

捻股数据分析显示不使用辊压成型系统的材料差异应有±1%到±1.5%的误差。因此这些结果会要求导线生产过程中对导线尺寸至少增加3%以确保符合参数要求。这部分额外材料是为客户免费提供的。

当使用Ceeco Bartell辊压成型系统的同时使用捻股设计软件时，可极大减少材料误差。

图1



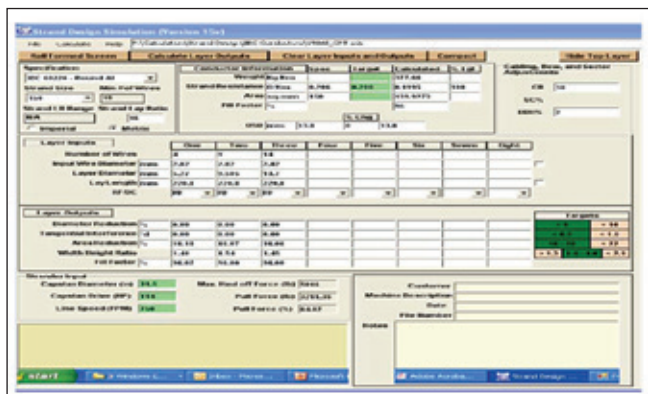


图2: 线缆模拟输出150mm<sup>2</sup> 紧压线缆



95mm <sup>2</sup> XLPE 经济分析			
填充系数	86%	92%	96%
配置	1=6=13	1=6=11	2=6=9
外径 (mm)	11.7	11.39	11.07
外部缺口间隙面积 (mm <sup>2</sup> )	15.88	0.710	0.663
绝缘成本 (US\$/km)	131.35	109.55	106.83

图3

与传统压实方法相比, 这种方法可极大降低成本, 这在当今价格高企的铝材、铜材背景下显得更为难能可贵。这意味着在可以达到IEC及ASTM关于最小直径标准的同时, 可以接近而不是超过最高电阻。

鉴于行业使用的多种线缆, Ceeco Bartell开发了一个帮助线缆设计数学模型。该模型使用理论及量化数据以预测线缆电阻。同时它还可以分析线缆几何结构以优化机械性能。结果是成品线缆电阻的精确预测。

图2为150mm<sup>2</sup>线缆横切面, 展示该程序如何协助开发优化线缆设计。

辊压成型程序因其有最小线缆直径而有巨大潜力。因此也可以为某一特定绝缘厚度尽可能降低成本。

图3显示生产填充因子从86%到96%间95mm<sup>2</sup> XLPE产品在绝缘方面所节约的成本。随着导体体积变小、缝隙消失, 绝缘材料使用大大减少。

92%填充因子是传统方法可达到的最佳压实。然而, 使用辊压成型流程可以达到96%。这可减少2%的材料成本。

挤压生产率部分依赖于线缆结构完整性。可应用于低压、中压、高压挤出。不稳定线缆结构不仅影响线缆及挤出流程, 而且可以导致废品率和停机时间的增加。

钢丝打结通常由不稳定线缆设计造成。如缠绕紧密的导线很少会有钢丝打结现象。线缆密度很大程度上取决于材料几何特征。因此导线放置很重要。紧密特圆/单向铺设导线元素往往是嵌套的, 因此他们本身与反向同心与SZ导线相比会有较小外径。

另外紧密特圆/单向铺设导线在压力下会自紧。由于这种自紧特征, 紧密特圆/单向铺设导线不大可能会产生缠绕现象。

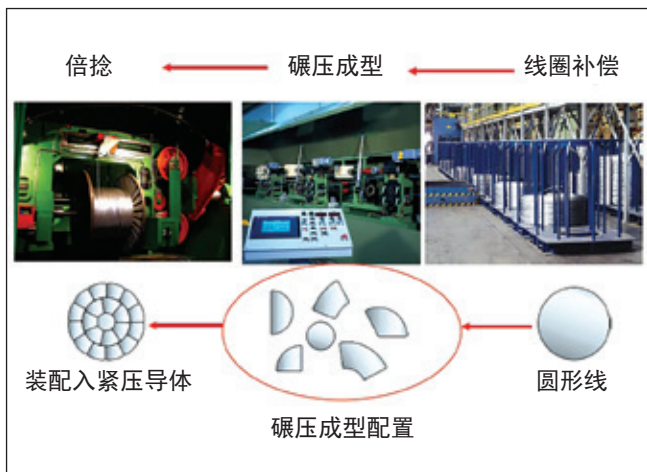


图4

线缆表面也非常重要。由辊压成型生产的导线往往平滑外层, 有利于挤出流程, 因此可以在基础流程过程中可以尽可能减少导体粉末的产生。

图4展示了整个流程。圆形线从大线圈取出, 根据不同产品尺寸, 通过辊压成型部件时他们或者通过高速倍捻机或者通过单捻机成型为不同配置产品。在生产高度紧密导线时, 该高速连续流程线速可达200m/min。碾压成型绳缆搓绞机24小时内可生产40吨150mm<sup>2</sup>紧密铝制导线。

## 结论

生产成本降低取决于多项因素如现有生产设备; 不管线缆是现行生产的还是购买的; 铜及铝线的投入及高速倍捻机的综合管理及控制都要极其小心并加以小心控制; 在最理想情况下, 这种成本缩减可以极大缩减投入回报期, 当然这得根据不同项目而定。

经由Ceeco Bartell碾压成型流程生产出的高性能碾压成型线缆可以在不影响导体性能的前提下节约生产成本。对此及其他新技术有所认识, 结合各种参数可进一步促进线缆设计开发进步, 与此同时, 可进一步优化线缆导体的生产。

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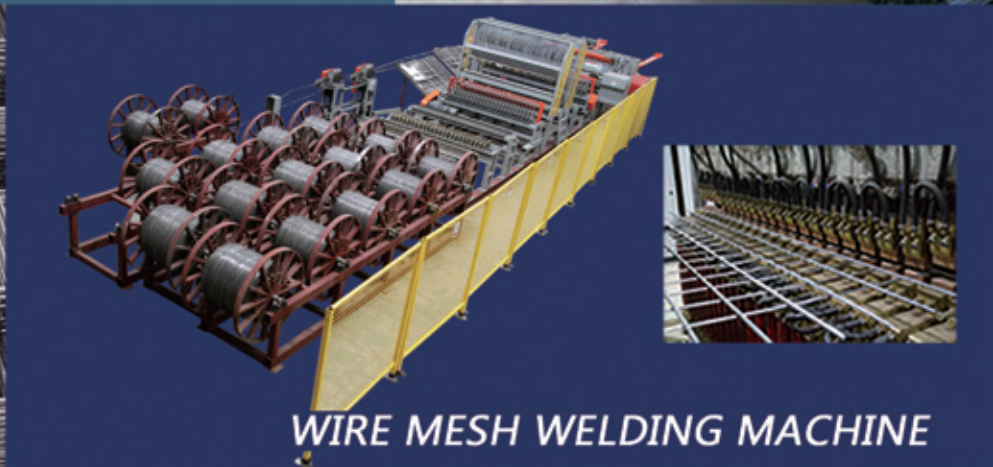
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